AN HBJ PUBLICATION

SEPTEMBER 1983/$2.00

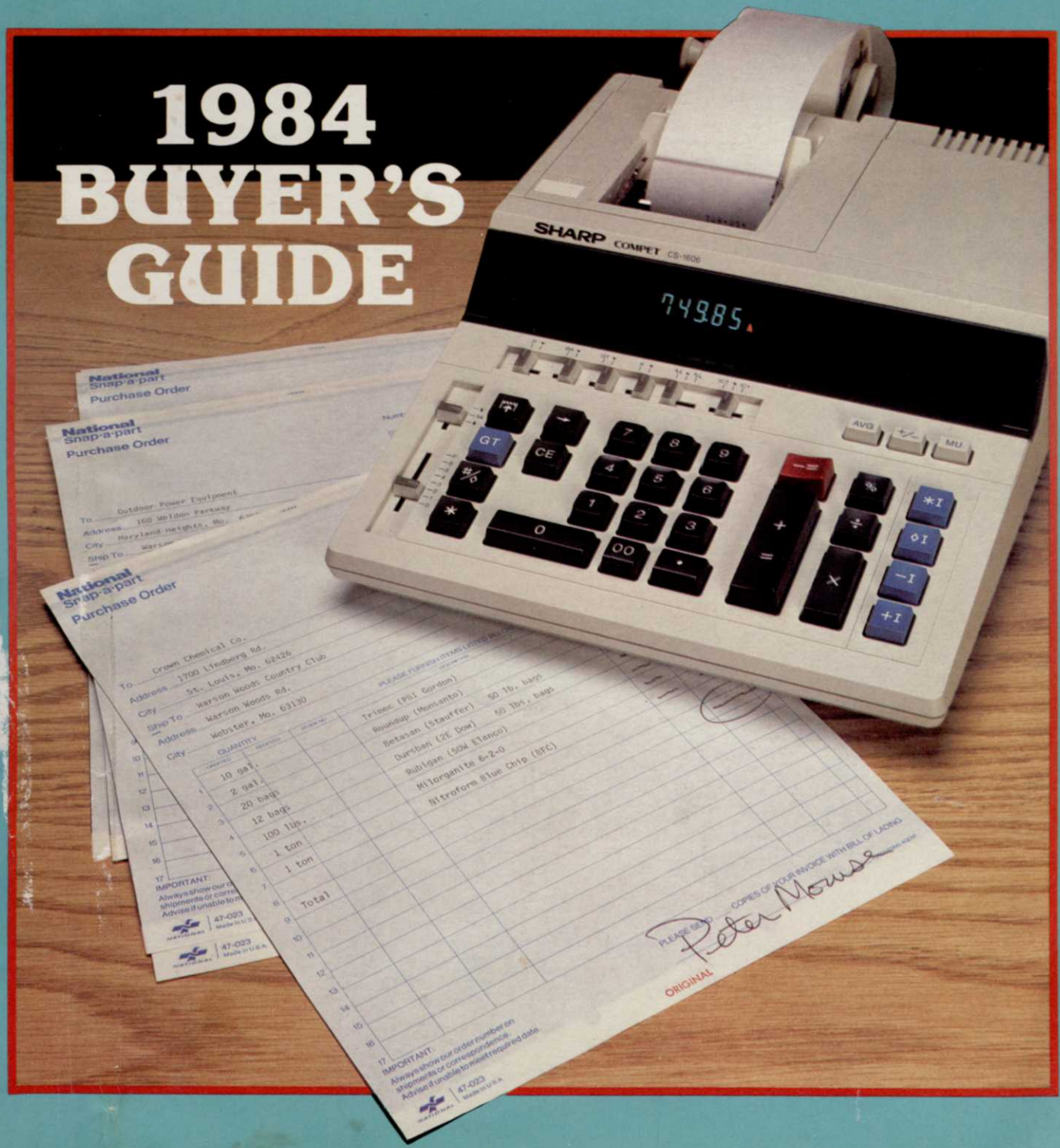
WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Design, Construction and Care Since 1962

Porter Brothers, Toro Pacific Enjoy Market Growth

Scotts Lays Off 170 . . Diamond, Showa Denko Launch SDS

Annual Mulching Causes Decline of Trees, Shrubs



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3919

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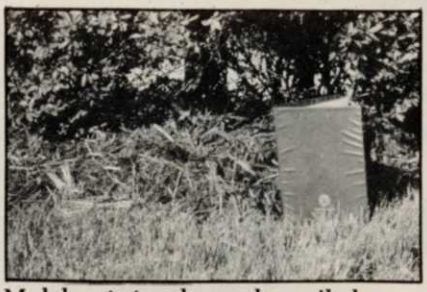
WT&T

Cover: Every year at this time calculators and catalogs come into play. Weeds Trees & Turf kicks off the planning and buying season with the 1984 Buyer's Guide, page 25-86.

SEPTEMBER 1983/Vol. 22, No. 9



Mulch gets too deep when piled on year after year, see page 22.

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Distributors Say Orders, and Competition Up

A survey of 50 landscape and turf product distributors in the U.S. reveals a definite upturn in buying by their customers. Competition for the business is keen with reports of price cutting.

Joe Porter travels 50 weeks per year to keep in touch with his customers, see page 92.

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Over-mulching: A National Plague

Dr. Francis Gouin of the University of Maryland criticizes an industry habit, annual mulching of plant beds to the point of root suffocation.

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Toro Pacific Draws A Pair of Aces

Twice, this young Los Angeles area distributor has benefitted from manufacturers selling company-owned stores. First Toro and now Cushman/Ryan. Meet the players in this success story.

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1984 Buyer's Guide

Just the reference you need to locate sources of new and existing products to purchase for the 1984 season. Use the Guide to contact manufacturers regarding their products and distributors in your area. Get a head start on 1984 with the Buyer's Guide.

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Porter Bros. Grows By Keeping in Touch

Joe Porter travels once a week, 50 weeks a year to "get a pulse" on his customers. Porter Bros. started in 1949 with one product, McCulloch Chain Saws. Today, they sell a wide range of turf and tree equipment as one of the largest distributors in the country.

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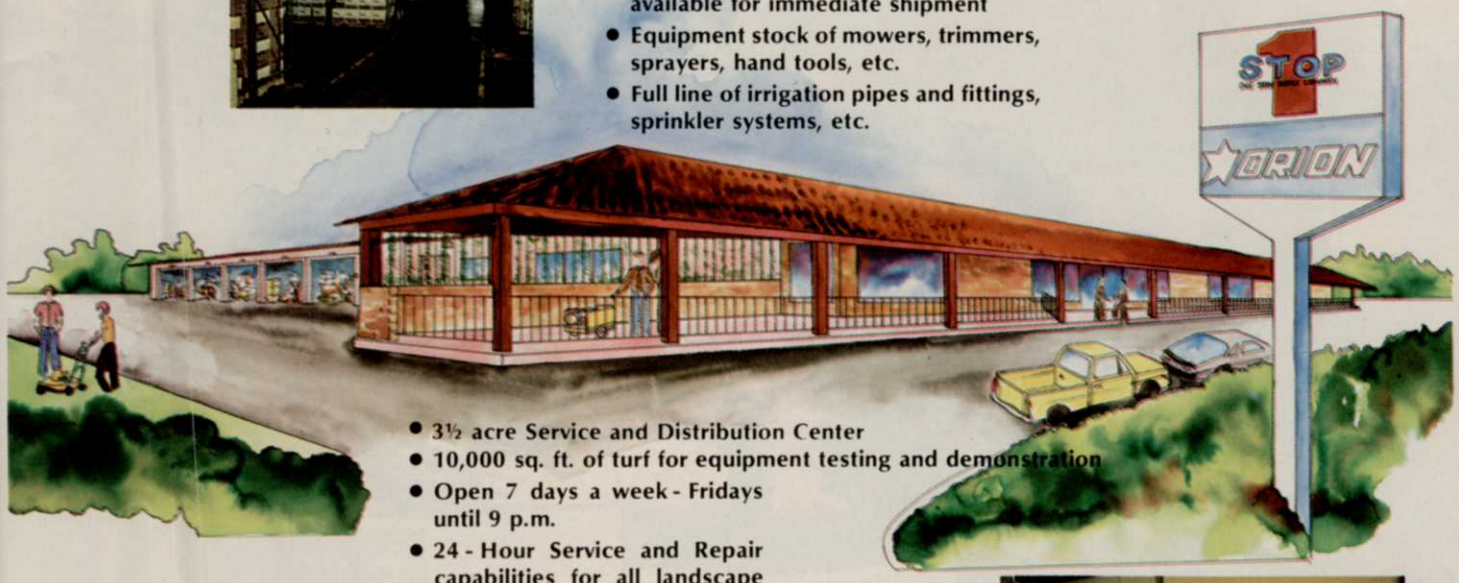

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Association management changes suggest a return to the basics

Five different Green Industry associations have changed their management in the first half of this year. The primary reasons seem to be reevaluation of association goals by association boards, belt tightening in general as members tighten their own belts, and rejection of a 1970's philosophy common to association executives that they know what's best for their members.

Changing association management from multi-management firms to captive, single management was the reason for switches at the American Sod Producers Association and the Professional Lawn Care Association of America.

By Bruce F. Shank, Executive Editor

Multi-management firms have management systems designed more for the firm than the association. Boardmembers often find these systems limiting, expensive, and sometimes demeaning.

Some multi-management firms work better than others, especially when the various associations are related; such as the American Association of Nurserymen and its related groups, National Landscape Association, Wholesale Nursery Growers of America, Garden Centers of American, National Association of Plant Patent Owners, and the Horticultural Research Institute. Sharing resources in this case seems to work.

More aggressive board members disagreeing with their association executives were the cause for three other changes in management; James McLoughlin at the Golf Course Superintendents of America, Frank Smith at the National Golf Foundation, and Allen Smith at the Associated Landscape Contractors of America.

Association executives have a built-in problem dealing with boardmembers who constantly change. On the other hand, today's board member is more interested in member services and balancing the budget than launching image campaigns based upon shows, magazines and fancy headquarters. Today's board member expects his association to operate under the same principles as his own business. He also realizes the long-term solution to industry image is based more in technical and business competence of the membership than things which divert dollars from the real solution, good training. **WTT**

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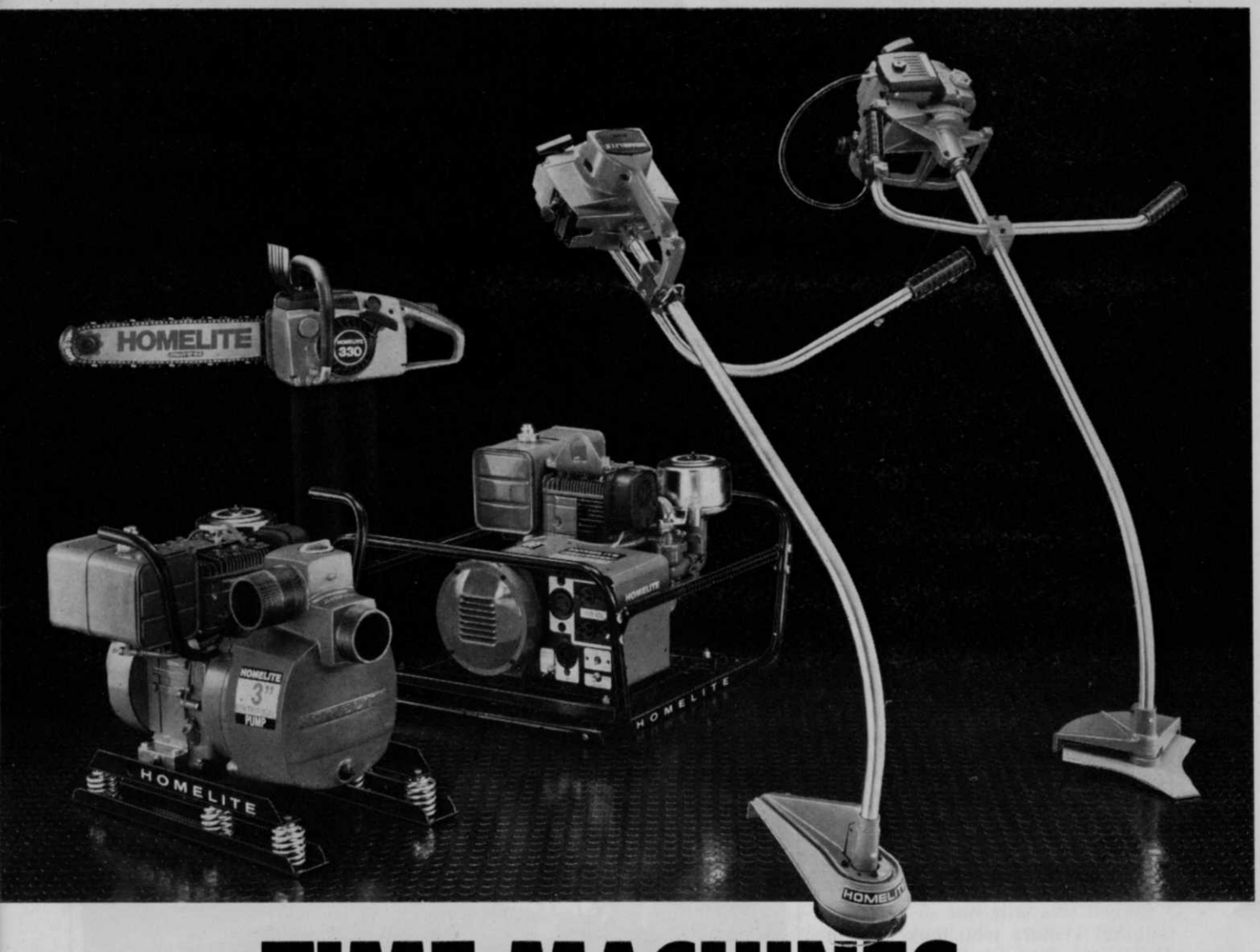

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INDUSTRY

Scotts lays off 170 in cutback

A changeover in top management and under budget sales figures combined in June to cause 170 employees of O.M. Scott and Sons, Marysville, OH, to lose their jobs. Hardest hit, according to Paul Devine, manager of public relations, was the marketing and research departments.

Lee Herron, president and chairman of O.M. Scott for the last 18 years, retired in June. Tadd Sietz, a marketing specialist and officer of Burpee Seed Co., acquired last year by O.M. Scott, is the new president. Faced with off budget numbers and marketing ideas of his own, Sietz made an across-the-board, top-down cut in marketing and research personnel.

George Horn, director of marketing for the Pro-Turf Division for the past eight years, was a victim of the cutback. "The 1984 marketing plans are already complete," Horn told Weeds Trees & Turf. "The Pro-Turf Division will feel very little effect from the cutbacks."

"The weather and the economy were mostly to blame for the sales numbers," said Devine. "Supply, distribution, and products will not be impacted by the move. The realignment is centered in the marketing group.

SOD

Sod goes international at summer field days

Ninety-eight percent of the sod in South Africa is kikuyugrass. There is no turf research being done in that country. For Graham Corbett of Lawns for Africa in South Africa, the American Sod Producers Association Convention in Atlantic City in July, offered the opportunity to exchange ideas with American and other foreign sod producers and see first-hand U.S. sod production.

Corbett was only one of 14 international visitors who took part in ASPA's first international convention. The more than 250 convention registrants included representatives from Finland, Austria, England, New Zealand and Australia.

Besides sod production, the foreign visitors also toured the world's largest blueberry farm and had an elaborate picnic-style dinner complete with country music at the Tuckahoe Turf Farms in Hammonton, NJ.

Opening the three-day convention were: Dr. A.J. Turgeon, formerly of Texas A&M - Dallas and now with Tru Green of East Lansing, MI; Dr. Henry Indyk of Cook College, Rutgers University (convention coordinator), Dr. Richard Hurley of Lofts Seed and presentations from the international guests.

Convention Chairman George Betts hosted a demonstration and tour at his Tuckahoe Turf Farm, with another field day at the Novasack Bros. Turf Farm in South Seaville.

Most of the attendees told WT&T the field days are the most beneficial part of the conventions.

"I enjoy seeing and meeting people and discussing problems," said Ted Tvetene of Terry, MT.

Too much rain *in seed country has Eddie Rose, left and Mark Fricker dejamming a combine in Willamette Valley, OR. Mature grass is swathed into windrows to dry so that seed can be removed easily. Wet seed sticks to the stalks and often passes through the combine resulting in wasted seed.*

Approximately 25 distributors displayed in the booth area at the convention hotel, Resorts International.

During the annual business meeting, Walt Pemrick of Crystal Lake, IL was elected president; Bill Campbell of Lynden, Ontario, president-elect; and Ike Thomas of Granbury, TX as secretary-treasurer.

Update: In a surprise vote during the ASPA business-meeting, the board voted to move the headquarters from Hastings, Nebraska to the Chicago area. Bob Garey, executive director for the past ten years, said the move would require a change in the by laws, and thus, a vote of the membership and not just the board. Garey would lose his job if the move is made.

CHEMICALS

Diamond, Showa Denko launch new venture

A joint venture between Diamond Shamrock and Showa Denko of Japan was launched during a signing ceremony near Cleveland in July. The new company, SDS Biotech Corp., will concentrate on agricultural chemicals and animal health products.

SDS Biotech corporate headquarters and research facilities are located in Painesville, OH. 1983 sales will approach $300 million according to Allan Tomlinson, chairman and chief executive officer of SDS Biotech.

Diamond Shamrock, a $3 billion

continued on page 10

NORTHRUP KING PRESENTS

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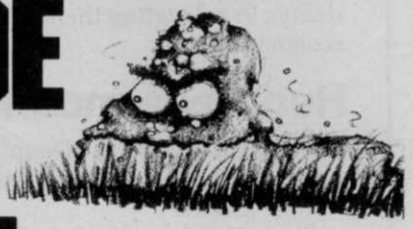

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Boulevard Mix	Any area with high pH (roadsides, sidewalks, boulevards, beachfronts, etc.)	Contains both "Fults" *Puccinellia distans* and Dawson red fescue which thrive on high saline or alkaline soils. Performs at low to high fertility levels.
Landscape Pro Mix	School grounds, cemeteries, golf course roughs, lawns	Fast establishing. Adapts to broad range of conditions and management levels. Low to moderate fertility requirements.
Overseeder II Mix	Fairways, tees, athletic fields	Fast establishing, traffic tolerant, disease resistant, penetrates compacted soil.
Medalist North Mix	Fairways, tees, cart paths, wear areas	Long term quality in high traffic areas. Clean mowing and disease tolerant.
Premium Sod Blend	Commercial sod producers	Fast establishing, exceptional dark green color, shade tolerant, superior disease resistance.
Special Park Mix	Parks, commercial developments, lawns	Low fertility tolerance, shade tolerant, adapts to wide range of soil types.

Ask your Northrup King distributor about the Medalist Turf Products for your needs. Or write Northrup King Medalist Turf Products, P.O. Box 959, Minneapolis, MN 55440.

MEDALIST TURF PRODUCTS

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GOLF UPDATE

Powell resigns GCSAA post

Lewis C. Powell, Jr., Director of Informational Services for the Golf Course Superintendents Association of America, resigned his position in June.

John Schilling, associate executive director of the GCSAA, said, "Mr. Powell's resignation was only accepted by the Executive Committee after a great deal of consideration. He had moved to Lawrence, KS, from Florida last fall and I'm sure that the unlikelihood of GCSAA now moving its headquarters to Orlando, FL, in the near future and a desire to return to closer contact with long-time associates impacted his decision to resign."

Powell's resignation follows on the heels of James McLoughlin's resignation as executive director Sept. 1. He, too, cited delays in relocating the national headquarters as a reason for his resignation.

Hundreds mourn Ray Gerber's death

Raymond Gerber, 84, "Dean" of midwestern golf course superintendents and long-time editor of the *Bull Sheet*, died in July after a short illness.

Ray's involvement in golf included the prestige courses Pine Valley, Medinah Country Club, Glen Oak Country Club, and Woodhill Country Club. He was president of GCSAA in 1950 and of the Midwest GCSA in 1946. He attended every GCSAA Annual Conference in the past 43 years. And, he edited the *Bull Sheet*, the official bulletin of the Midwest Association of Golf Course Superintendents, for the past 11 years.

Ray Gerber received just about every award possible for a superintendent and the friendship of hundreds of fellow superintendents around the world. Contributions may be made in Ray's memory to the Illinois Turfgrass Foundation, University of Illinois, Urbana, IL 61801.

Ted Robinson of Laguna Niguel, CA, center, accepts the presidential gavel from outgoing American Society of Golf Course Architects' president Jack Snyder of Phoenix at the recent ASGCA meeting in Dallas. Other newly-elected officers include (from left to right), John Watson, secretary, Lachute, Quebec, Canada, Dr. Michael Hurdzan, vice president, Columbus, OH, and Kenneth Killian, treasurer, Palatine, IL. The Society is comprised of leading golf course architects from Canada, Mexico and the U.S.

International partners *in SDS Biotech celebrate after signing documents in July, (l to r) SDS Chairman Allan Tomlinson, Showa Denko Chairman Haruo Suzuki, and Diamond Shamrock Chairman William Bricker.*

energy company, and Showa Denko, a $1.6 billion Japanese chemical company, have worked together for 15 years to produce the fungicide Daconil 2787. SDS Biotech is a 50:50 joint venture capitalizing on research and marketing strength in the Pacific Basin region of the world.

CHEMICALS

McGinn named Cleary president

Martin W. McGinn has been named president and chief executive officer of the W.A. Cleary Corporation, Somerset, NJ. Barbara Cleary has moved up to Vice Chairman of the Board of Directors and will continue to work in developing sales and marketing strategies.

McGinn, a Notre Dame graduate in chemistry and philosophy, has been involved in the turfgrass industry for the past 15 years. He formerly worked for Southern Mill Creek Products, Tampa, FL.

TURFGRASS

Space-age turfgrass highlights FTA show

"Turfgrass in the Space Age" will be the theme of the 31st annual Conference and Trade Show of the Florida Turf-Grass Association, Oct. 9-12 at the Hyatt Orlando, Kissimmee, FL.

Dr. Elliot C. Roberts, Lawn Institute, Pleasant Hill, TN, will be the keynote speaker on Oct. 10. Pat McCarty of Epcot Center, will also speak.

Three concurrent sessions will high-

continued on page 14

9 of the top 10 golf courses in America have Toro® irrigation

Toro's VT3 central-satellite control system utilizes solid state electronics for accuracy and dependability

There are some good reasons WHY!

Toro irrigates nine of America's top 10 golf courses . . . 16 of the top 20 . . . 33 of the top 50. That's because irrigation probably is the most important single factor in turfgrass management, and most of those responsible realize that Toro offers them a hard-to-beat combination of expert knowledge and advanced-design equipment. Whether you're planning a new course, replacing your existing system, or trying to solve specific problem areas, a good partner to team up with is the man from Toro!

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When you renovate a lawn or slope with Roundup you won't have to dig, disc or use a sod cutter. Just apply Roundup when the old lawn is actively growing and at the proper stage of growth. Then come back 7 or more days later to power rake, till or slice—then plant. Your customers will like Roundup too, because the work site can hold up to light foot traffic during renovation.

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Round up was also used for trimming and edging around new plantings, as well as follow-up maintenance.

Monsanto

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LANDSCAPE UPDATE

ALCA management conference packed with facts

The Associated Landscape Contractors of America's Management Division has developed an information packed program for its two-day conference in Denver, Nov. 13-15.

The Division attracted more than 400 for its first conference last fall in Dallas. The content of the second conference has been increased to provide both technical and management help for middle to upper management of landscape companies of all specialties. All sessions are concentrated into two days to reduce time away from the job.

Sales and marketing sessions will be led by the Sales Management Institute of Raleigh, NC, and include sales training, scheduling, manpower utilization, pricing strategies, management trends in the 80's, and market planning.

Technical sessions are led by university specialists and include use of growth regulators, cool and warm season weed control, and application techniques. Speakers include Jack Butler and Bob Zindhl of Colorado State University, Clyde Elmore of the University of California, Davis, B.J. Johnson of the University of Georgia, and Ray Freeborg of Purdue.

The Management Division is giving the lawn care association a run for its money with this conference. The site of the conference is the Marriott Southeast, Denver. Early registration discounts apply until October 20. Prices range from $25 for students to $175 for non-members. You can register by contacting ALCA, 1750 Old Meadow Rd., McLean, Va. 22102, (703) 821-8611.

Housing nears pre-recession level

Despite the slight rise in interest rates this spring, single-family and multi-family housing starts were up nearly 75 percent from the year before, nearing a level not achieved since September 1979.

The Commerce Department reported May housing starts were close to 1.8 million units, up from 1.03 million a year earlier. Multi-family housing starts increased twice as much as single-family starts from the prior month, 28 percent and 14 percent respectively.

The South, West and North Central parts of the country shared the increase. The Northeast declined slightly.

Building permits for housing also rose in May to a 44-month high signalling future starts.

Opportunities in landscape construction should begin this fall and surge in 1984. Landscape maintenance work should start rising due to new construction by next summer.

ILCA awards entry deadline set

The Illinois Landscape Contractors Association is accepting entries for its 1984 awards program.

Any landscape architect, landscape designer, firm, property owner or professional individual representing a landscape installation may enter. All entries must be recieved by Nov. 1. Awards will be presented at the ILCA Awards Luncheon during the Mid-America Horticulture Trade Show in January 1984. For entry particulars, contact ILCA, 4 A East Wilston St., Batavia, IL 60510, (312) 879-5566.

NEWS *from page 10*

light topics for golf turf, lawn care and parks and recreational turf. Dr. Houston Couch of Virginia Polytechnic Institute, Jim Brooks, executive director of the Professional Lawn Care Association of America and Dr. Bill Daniel of Purdue University are scheduled to speak.

On Oct. 11, there will be two concurrent sessions. Session I will offer a chance for Pesticide License Re-Certification Review and the Core Exam, as well as category examinations for ornamentals and turf. Session II will be on Turf Equipment for the Space Age.

For more information, contact the Executive Office of the Florida TurfGrass Association, 1520 Edgewater Dr. Suite E, Orlando, FL 32804 (305) 425-1581.

EDUCATION

Guelph offers cemetery management program

The Ontario Association of Cemeteries and the University of Guelph are cooperating to offer a Cemetery Management and Maintenance program through the university's home study program.

The 45-credit course leads to a diploma. Each course has a tuition ranging from $63 to $152 which covers the cost of all materials. Application for enrollment is available from the Department of Independent Study, University of Guelph, Guelph, Ontario, Canada N1G 2W1.

TURFGRASS

Turgeon leaves Texas A&M

Dr. A.J. Turgeon, Professor and Resident Director of the Texas A&M Research and Extension Center at Dallas, has left his post there to become vice president of research and technical products for Tru Green, a fertilizer, insect and weed control company, headquartered in East Lansing, MI.

His resignation took effect Aug. 1.

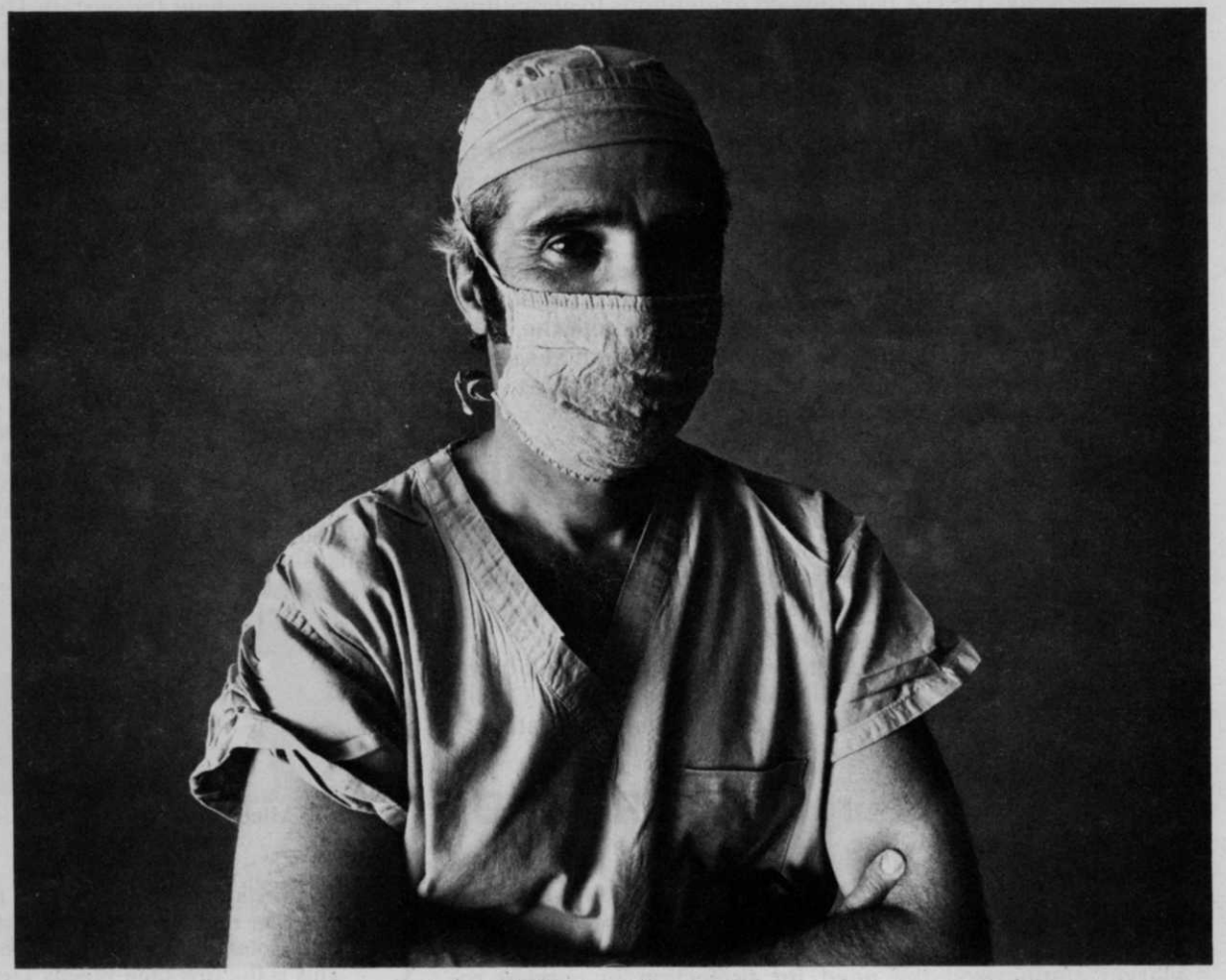
Turgeon, 40, who has been at Texas A&M for the past 3½ years, said he will miss academics, but looks forward to "the opportunity to move into industry and full-time turfgrass work."

"I grew up on a golf course (Metropolis Country Club in White Plains, NY) and spent 8½ years at the University of Illinois," Turgeon told WT&T.

While at Texas A&M, Turgeon headed the implementation of a long

Continued on page 16

Is anyone as knowledgeable about disease as a turf manager is?



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For your free full-size (22" x 28") poster of this ad, send your name and address to:
Pennfine Poster # 3, P.O. Box 923, Minneapolis, MN 55440. (Watch for the other five ads in this series.)

Circle No. 143 on Reader Inquiry Card

GOVERNMENT UPDATE

Arborists file suit over noise rules

The National Arborist Association (NAA) filed suit in June against The U.S. Department of Labor for "arbitrary, capricious, discriminatory, and unconstitutional" regulation under the Hearing Conservation Amendment.

The suit, filed in the U.S. Court of Appeals, claims the Occupational Safety and Health Administration regulation adversely impacts, harms and prejudices the membership of the Association. The Amendment, to take effect March 1, 1984, requires employers to monitor noise levels in employee work areas. Noise levels are not to average more than 85 decibels (dB) over an eight-hour period. OSHA has allowed exemptions to agriculture, oil and gas drilling, and the construction industry.

"The ominous aspect of this regulation is it makes an employer responsible for hearing loss, regardless of the cause," says NAA Executive Vice-President Robert Felix.

"Although chippers, stump cutters and chain saws exceed the decibel level, hearing protection required by other legislation reduces noise levels to well below the required level," Felix points out.

The NAA suit was filed in the US Court of Appeals naming US Department of Labor and Occupational Safety and Health Administration officials as defendants. NAA pointed out the sound level of a typical disco is 127 decibels. The organization seeks to resolve the matter before the compliance date of March 1, 1984.

Nursery lab saved from budget cuts

A broad-based plea to save the Delaware, Ohio, Nursery Crops Research Laboratory from the budget ax has succeeded. The appeal, led by the American Association of Nurserymen, was initiated after word leaked from various budget committees the Delaware facility and two others were in jeopardy.

The present level of funding, more than $5 million, will be retained and "Research work will be continued," said Orville Bently, USDA Assistant Secretary for Science and Education.

Monsanto exec urges joint R and D

Testifying before a U.S. House subcommittee on agriculture in June, Dr. John Marvel, general manager of Agricultural Products Research for Monsanto, called for more government effort to encourage joint research programs in agriculture.

Marvel emphasized the need for protection of current research data and "a growing erosion of national and international property rights."

"For decades our agricultural productivity has been sustained by scientific and technical advances and the quick application of these technologies. Now this momentum is threatened.

"The role of government should be to focus on setting national policies and priorities for publicly funded programs and research. New research efforts must reach across campus disciplines, federal research organizations, and private industry to create new types of research teams which will help each other and bring new scientific disciplines into agriculture."

NEWS *from page 14*

range plan, the reorganization of the research program and $1.5 million building expansion. He has also authored more than 200 articles and journals.

"We are very excited about having Dr. Turgeon join us," said Ross Pechto, vice president of operations for Tru Green. "We feel he is the undisputed expert in the country regarding turf research and turf management. He will bring the kind of knowledge and expertise to Tru Green that every company needs in order to succeed."

In his new position, Turgeon will coordinate coorporate research and act as liaison between the company and the academic world. Tru Green has offices throughout the eastern United States.

Dr. James Gardenhire will take over Turgeon's duties at Texas A&M Research and Extension Center until a full-time successor is named.

STAFF

Third editor joins *Weeds Trees & Turf*

Kevin Cooney, a news journalist trained at Colorado State University and raised in New Jersey, was named assistant editor of *Weeds Trees & Turf, Lawn Care Industry* and *Pest Control* magazine in July. He becomes the third member of the editorial staff, including Associate Editor Maureen Hrehocik and Executive Editor Bruce Shank.

Kevin Michael Cooney, *new assistant editor*

Cooney's experience ranges from newspaper reporter to public relations for the Colorado Extension Service.

This is the first time *Weeds Trees & Turf* has had an editorial staff larger than two. "We are putting great emphasis on news and personal interviews with readers," said Shank. "To do this well, we needed a third editor."

Sales changes made for WT&T and LCI

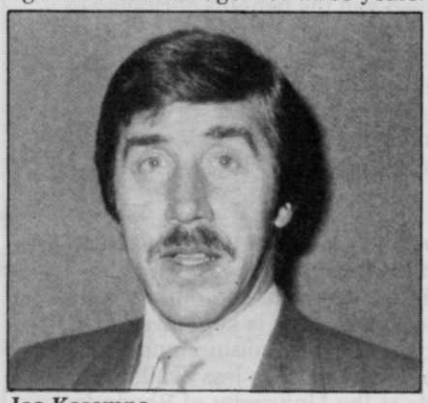
Group Publisher Bob Earley announced changes in the sales staff for *Weeds Trees & Turf* and *Lawn Care Industry* magazines in July following

Continued on page 19

NEWS *from page 16*

the departure of Jim Brooks to be executive director of the Professional Lawn Care Association of America.

Ron Kempner, Atlanta, was promoted to national sales manager of both *Weeds Trees & Turf* and *Lawn Care Industry*. Kempner has served as regional sales manager for three years.



Joe Kosempa

Joseph J. Kosempa, Cleveland, has been hired as North Central regional sales manager. Kosempa, a veteran newspaper advertising salesman, will be based in the Cleveland office.

Dick Gore remains publisher of *Weeds Trees & Turf* based in Atlanta and Bob Earley is based in Cleveland.

With the Lancer 350, 2 men can cover a lot of ground.

The only thing small about the Lancer 350 Hyrdro-Mulcher is its size. On the job, this 350-gallon unit is a giant.

In a normal work day, a two-man crew can cover:

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- **1 apartment or condo lawn (42,000 sq. ft.) on 12 tankloads, or**
- **1 athletic field (63,000 sq. ft.) on 18 tankloads.**

The Lancer 350, mounted on a single-axle trailer, handles seed, sprig, fertilizer and/or mulch operations. It comes with four nozzles and a 50′ extension hose. Optional is a high-pressure pump for herbicide and fungicide application.

For more information, including a free catalog, write or call today.

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Circle No. 104 on Reader Inquiry Card

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WTT9/83

Circle No. 102 on Reader Inquiry Card

PROBLEM SOLVERS

By Balakrishna Rao, Ph.D., and Thomas P. Mog, Ph.D.

Q: *We were told that our arborvitae, which were beautiful last fall but look terrible this spring, have "winter injury." What exactly is winter injury and what can be done to save our trees? (Iowa)*
A: Winter injury is a catchall for various kinds of injury which show up after the winter. Most so-called "winter injury" results from low temperatures, desiccation or sunscald.

Any time nondormant plant tissue is subjected to abnormally low temperatures it may be damaged or killed. Damage caused by low temperatures occurs in early fall, late spring or in winter when the temperature fluctuates enough to break dormancy.

Desiccation means to drying up of something; in this case, plant tissue. When above-ground parts are getting less water from the roots than they are losing, desiccation occurs. Water loss from dormant plants, while less than that of actively growing plants, still goes on in the winter. If the soil is frozen or very dry, the lost moisture is not replaced by water entering the plant via the roots. The result is dead foliage, buds and branches.

Winter sunscald is damage to the trunk where bark or cambium is killed. High temperatures on a sunny, bright winter's day followed by low temperatures after sunset lead to this sort of injury. In this instance it is not simply the cold but the rapid change in temperature which destroys tissue. Winter sunscald is more often seen on thin-barked and transplanted trees, being more prevalent on the south and west sides of the tree.

To improve the appearance of the injured plant and to increase the chances of survival, prune out the dead branches, protect what is still alive and increase overall vigor. Wait until this year's foliage is out before pruning. This makes decisions as to what branches are truly dead and should be removed easier. If defoliating agents such as insects or fungi attack the winter-injured plant, control them quickly. Fertilizing and watering the damaged trees or shrubs will improve vitality and maximize growth. Be aware that additional mortality may show up after the spring flush. This is because the cambium and the vascular tissues, produced by the cambium, were injured or killed and cannot supply enough water and nutrients to the new growth. These branches should also be removed as the damage becomes apparent.

Q: *What is your opinion of tree injections? (Missouri)*
A: If for no other reason than to get others to send in their comments and data, let's toss out a few thoughts on the subject.

Wounds of any origin are harmful to the tree and should be avoided. The smaller the wound, the smaller the chances are of doing permanent damage to or killing the tree. Injections/implants should be used only when established treatments fail. Why? Because we know the strengths and weaknesses of sprays and soil treatments. To date, we have not acquired enough information, i.e., efficacy tests with controls to evaluate injections/implants.

The concept of injections is appealing from several standpoints—ease of application, lack of drift and client acceptability to name a few. We've all gotten a "shot" from the doctor. I am for innovation, and the tree injection technique has merit in certain situations; however, my major reservations lie with the materials being injected and the benefits attributed to the injections.

A consensus of opinion, either for or against, does not exist among tree care people. We simply need more research on tree injections before we can judge their performance and cost effectiveness as compared with what we are using now.

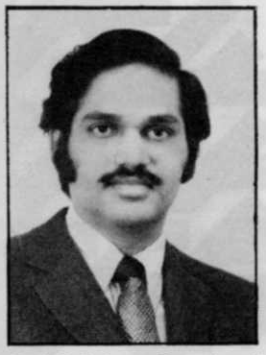
Q: *We like grass as opposed to mulch under our trees. Does turf really hurt the tree? (Ohio)*
A: Experience has shown that trees and other woody ornamentals do better when grass is kept away from the trunk or stem(s). Grass takes moisture and nutrients from the soil so there has to be less available to the tree. Experiments at the University of Rhode Island have shown allelopathy may be involved. Allelopathy is any direct or indirect harmful effect of one plant on another through production and liberation of chemicals into the environment.

Dogwoods and forsythia were grown in plots with and without turf. The "turfless" plants grew better. When water and fertilizer did not improve the growth of the species of grass were soaked in water and this water was then applied to potted forsythia plants. Shortly thereafter the rate of growth decreased. Apparently something from the grass roots leached into the water and inhibited the growth of the forsythia.

Possibly the biggest problem associated with having grass extend to the tree trunk is wounds caused by lawn mowers. Wounds can lead to decay and/or wood boring insects.

Proper mulching will inhibit the growth of weeds and grasses. Mulching also reduces the need for mowing close to the trunk. Mulching provides a barrier which may keep people and machines away from the basal portion of the trunk. For all of these reasons, mulching about the base of woody ornamentals in lawns makes sense.

Continued on page 105



Balakrishna Rao is plant pathologist and Thomas Mog is pest management specialist for Davey Tree Expert Co., Kent, OH.
Questions should be mailed to Problem Solver, Weed Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.

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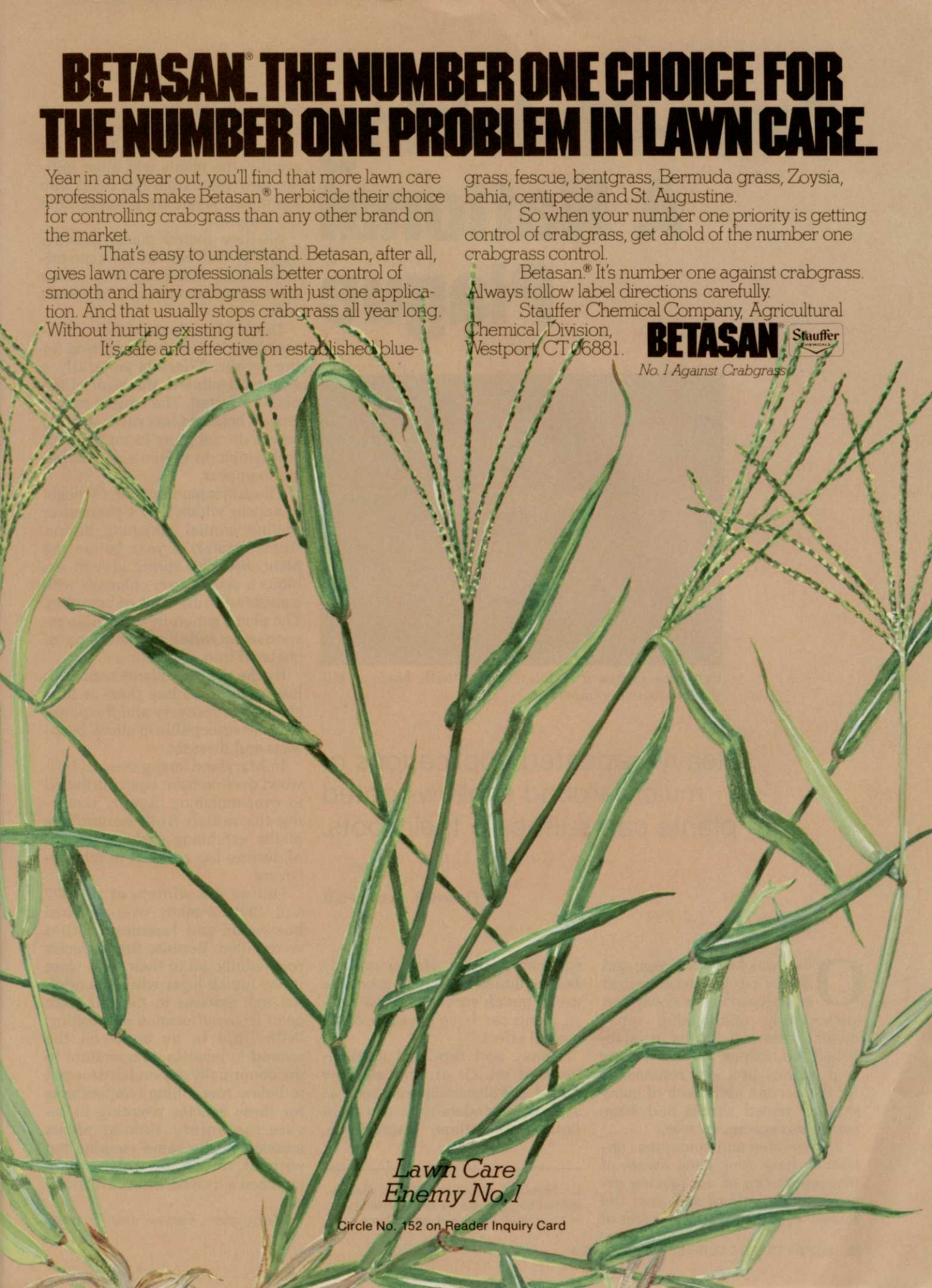


Lawn Care Enemy No. 1

Circle No. 152 on Reader Inquiry Card

Over-Mulching A National Plague

Excessive layers *of mulch will eventually harm or kill shallow-rooted ornamentals.*

Heavy, repeated applications of mulch around shallow-rooted plants can suffocate their roots.

Francis R. Gouin, Ph.D.

Over-mulching of trees and shrubs can best be described as a plague that is slowly and methodically annihilating ornamental trees and shrubs in established landscapes. Over-mulching is a serious problem responsible for the decline and death of many shallow rooted shrubs and large coniferous specimen trees.

Nurserymen and landscape contractors have long been aware of the importance of not placing excessive amounts of soil over the roots of established trees for fear of suffocating them. However, they fail to understand that excessive use of mulch around shallow rooted plants can have the same detrimental effect.

Heavy and repeated applications of mulch around shallow rooted established species such as azaleas, rhododendrons, mountain laurel, leucothoe, andromeda, boxwoods, hollies, yews, and camelias can suffocate their roots. If the species has the ability to root readily, the plants will often initiate new roots from the stems into the mulch layer, but produce little top growth.

Shallow rooted plants growing on sandy well aerated soils can tolerate more mulching than plants growing on heavy clay or silt loam soils.

Death to plants from over-mulching is slow and agonizing for the owner. There is generally a gradual decline in the vigor of the plants affected. The annual rate of growth becomes less each year, the leaves do not grow to mature size and symptoms of iron chlorosis begin to appear.

These symptoms generally begin to appear within 2 to 4 years after routine annual mulching begins. Approximately a year before the plant dies, the spring growth exhibits a severe iron chlorosis with considerable die-back of branches. The plants generally show little response to foliar applications of chelated iron or fertilizers.

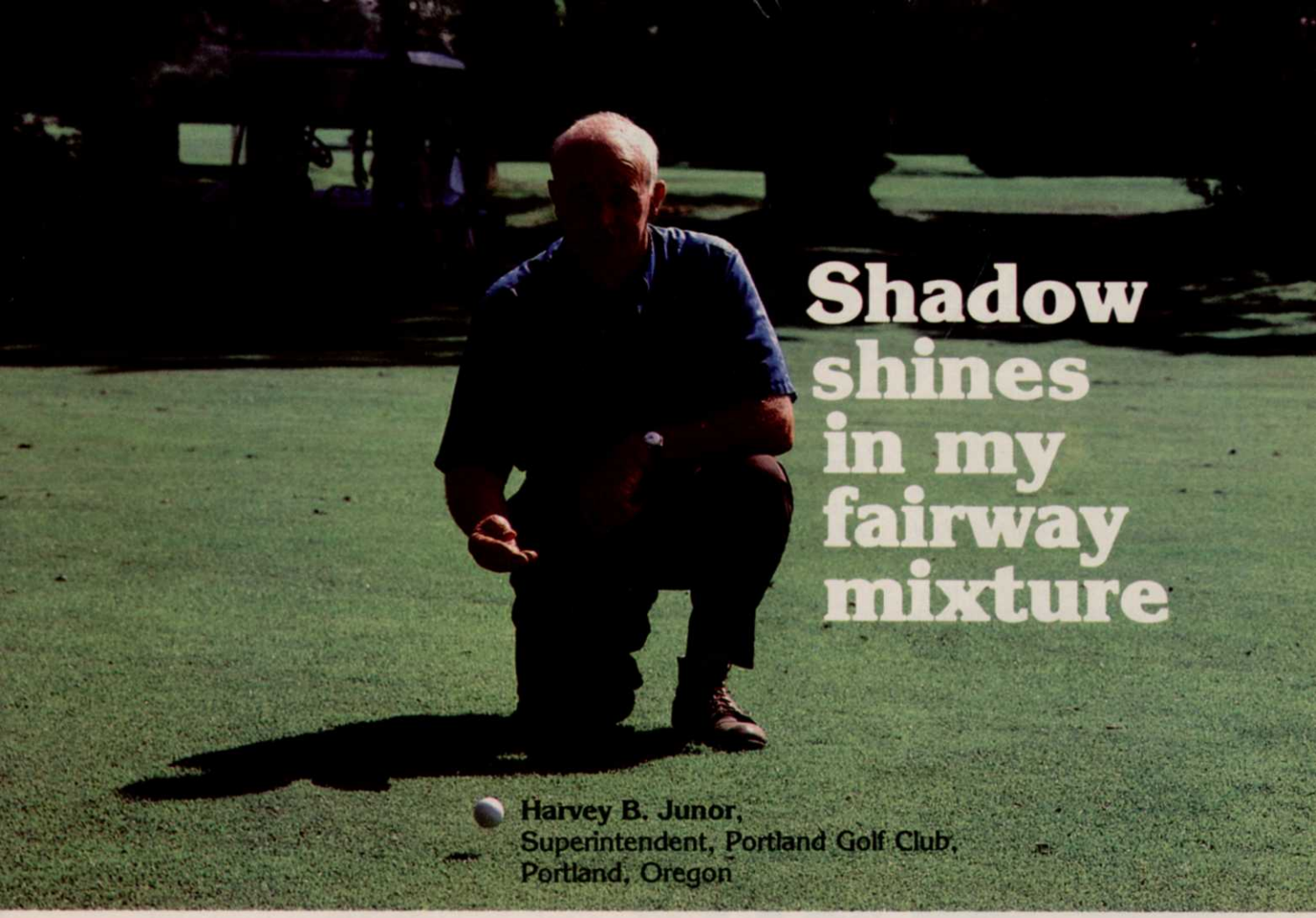
By the time the plants reach this last stage of decline there is little chance for recovery and the plants become susceptible to attack by insects and diseases.

In Maryland, many cases of boxwood decline have been attributed to over-mulching. Simply removing the mulch from around the plants exhibiting early symptoms of decline has resulted in total recovery.

During the winters of 1976-77 and 1981-82 many over-mulched boxwoods and Japanese hollies were killed. Because these species root readily, all of their roots were in the mulch layer while the original root systems in the soil were dead from suffocation and rotting. With little to no snow on the ground to insulate, temperature in the abnormally dry mulch dropped to below root killing temperatures for these species resulting in severe root injury. Similar plants growing in the same vicinity, but without mulch or only lightly mulched survived without difficulty.

Many pine, spruce and fir trees

Dr. Francis R. Gouin is professor of ornamental horticulture for the University of Maryland, College of Agriculture.



Shadow shines in my fairway mixture

Harvey B. Junor,
Superintendent, Portland Golf Club,
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are killed because mulch is piled high around the stems. These species are highly susceptible to stem rot diseases causing organisms that thrive in the cool moist environment of the heavy mulch layer. Most species of spruce appear to be especially susceptible to injury from mulch piled around their stems.

Although it is profitable to apply mulch annually to landscape plantings, it is detrimental. Many irreplaceable trees and shrubs in landscapes are being killed because organic mulches are being over-used. One to two inches of mulch is adequate to keep the soil cool, reduce water lost by evaporation, give the landscape a neat appearance and to allow easy penetration of water into the soil.

Mulches should not be used exclusively to control weeds.

Shallow raking the existing mulch will give the landscape planting that freshly mulched appearance. Fresh mulch should not be applied until the existing mulch is nearly all decomposed and lightly incorporated into the upper layer of soil.

Mulches should not be used exclusively to control weeds. As organic mulches decompose they enrich the soil making conditions favorable for weed seeds to germinate and for roots of perennial weeds to become established.

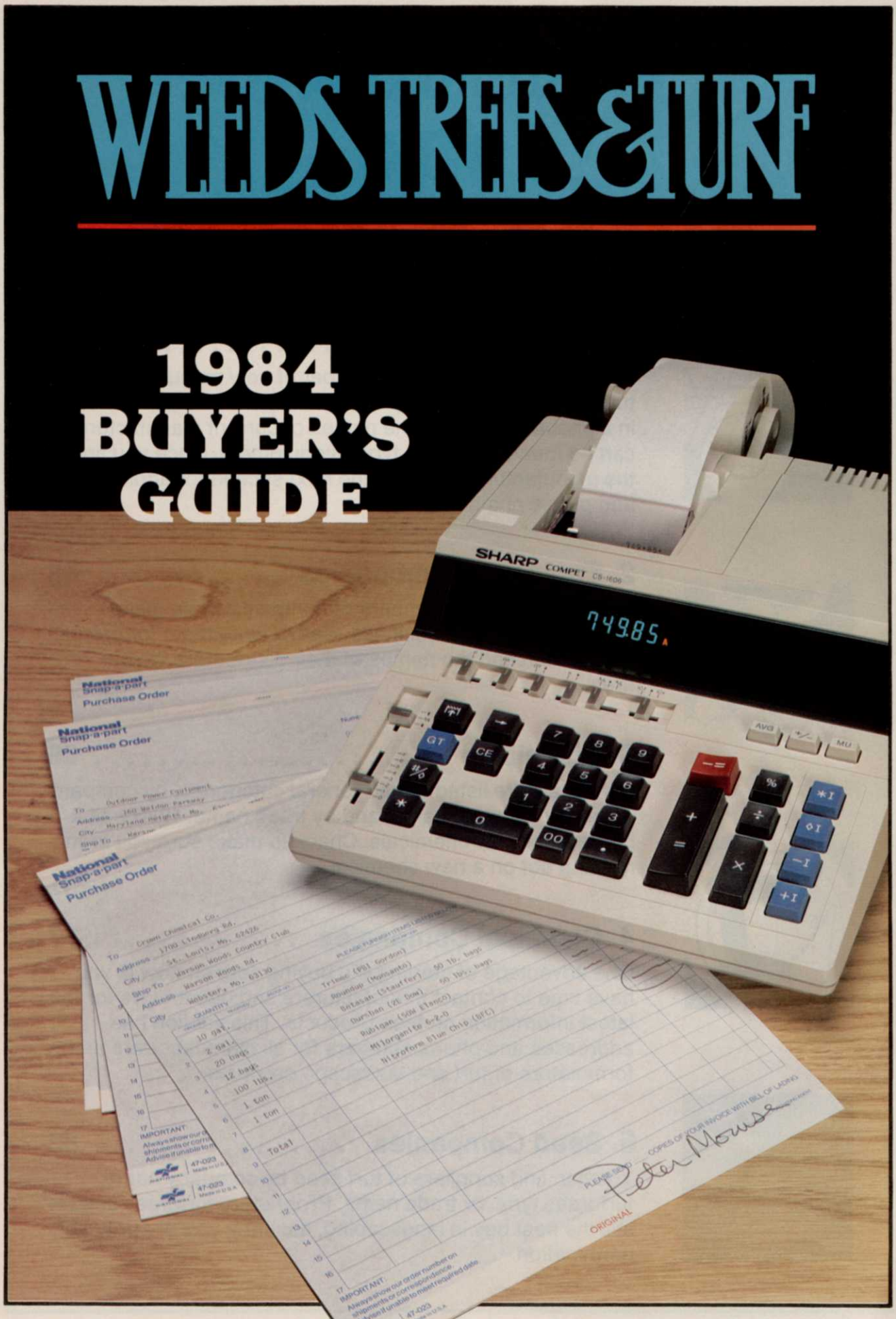
Weeds in landscape plantings should be controlled mechanically by hand weeding or with pre- and/or post-emergent herbicides. There are a number of herbicides on the market that can be used safely around a wide variety of ornamentals. Directed spray applications of post-emergent herbicides can be used to kill existing weeds while the pre-emergent herbicides will control germinating weed seeds.

Yearly applications and heavy applications of organic mulches to control weeds should be discouraged. **WTT**

← Circle No. 119 on Reader Inquiry Card

WEEDS TREES & TURF

1984 BUYER'S GUIDE



WEEDS TREES & TURF

1984 BUYER'S GUIDE

1. Equipment 28

You'd be surprised at the number of new manufacturers of turf and landscape equipment. The types of equipment are in alphabetical order. The names of current manufacturers can be found under the type of equipment. Once you find the manufacturers, look in the next section for addresses and phone numbers.

2. Equipment Companies 48

Names and phone numbers of companies who make equipment for your business. Call or write them for product information and the names of their distributors in your area.

3. Chemicals 66

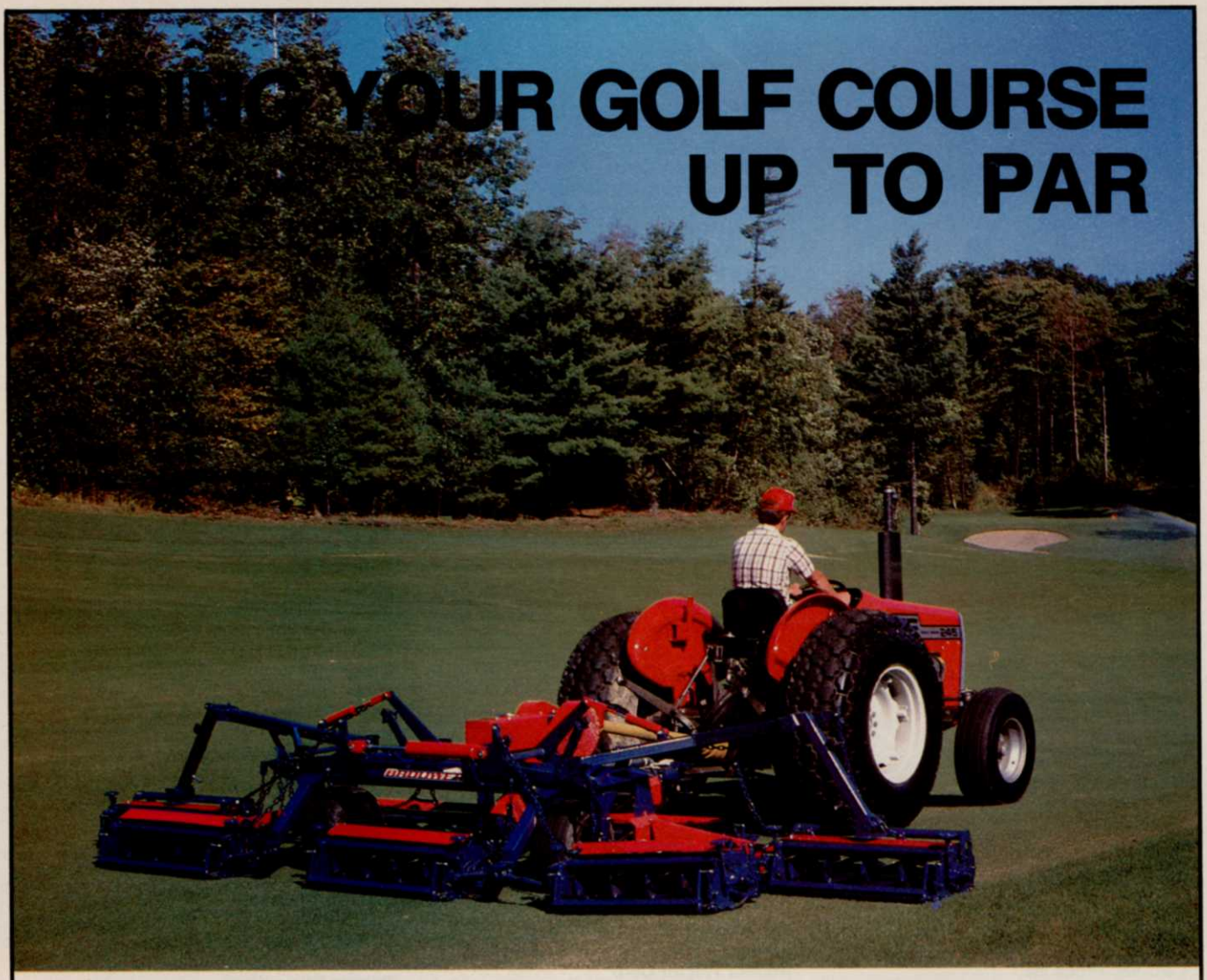
Chemicals are listed under general categories, by company name, by common name, and by trade name. 1983 was a big year for new chemicals. Check to make sure you aren't missing out on a new chemical.

4. Chemical Companies 77

One advantage of starting the buying season now is you have time to contact manufacturers and distributors for the latest information on their products. This section has addresses and phone numbers for all manufacturers and formulators of turf and landscape products.

5. Seed Companies 83

You can find suppliers of turf seed by company name, turfgrass type, or trade name. Proprietary turfgrass seed is still the best buy in landscaping, assuring you of purity and germination.



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Circle No. 105 on Reader Inquiry Card

1. Equipment

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Blades, Mower

Ariens Co
Bomford & Evershed Ltd
Buck Haven Industries Inc
Bunton Co
FMC Corp
Goodall Div Bunton Co
Lakeshore Equipment & Supply
MTD Products Inc
Orbex Inc
Orion Chemical Inc
Power Lawnmower Parts Inc
Sensation Corp
Toro Co Commercial Prods
Yanmar Tractor (USA) Inc
Yazoo Mfg Co

Blades, Dozer/Scraper

American Trencher
Ariens Co
Bomford & Evershed Ltd
Brillion Iron Works
Roscoe Brown Corp
Bush Hog Implements
J I Case
Excel Industries Inc
FMC Corp
Ford Motor Co Tractor Operations
Haban Mfg Co
Kubota Tractor Corp
Long Mfg NC Inc
Massey-Ferguson
Weldco (WA) Inc
Wheel Horse Products Inc
Yanmar Tractor (USA) Inc
York Rakes Div York Modern Corp

Bleachers

Kay Park Rec Corp
Miracle Recreation Equipment Co

Blowers

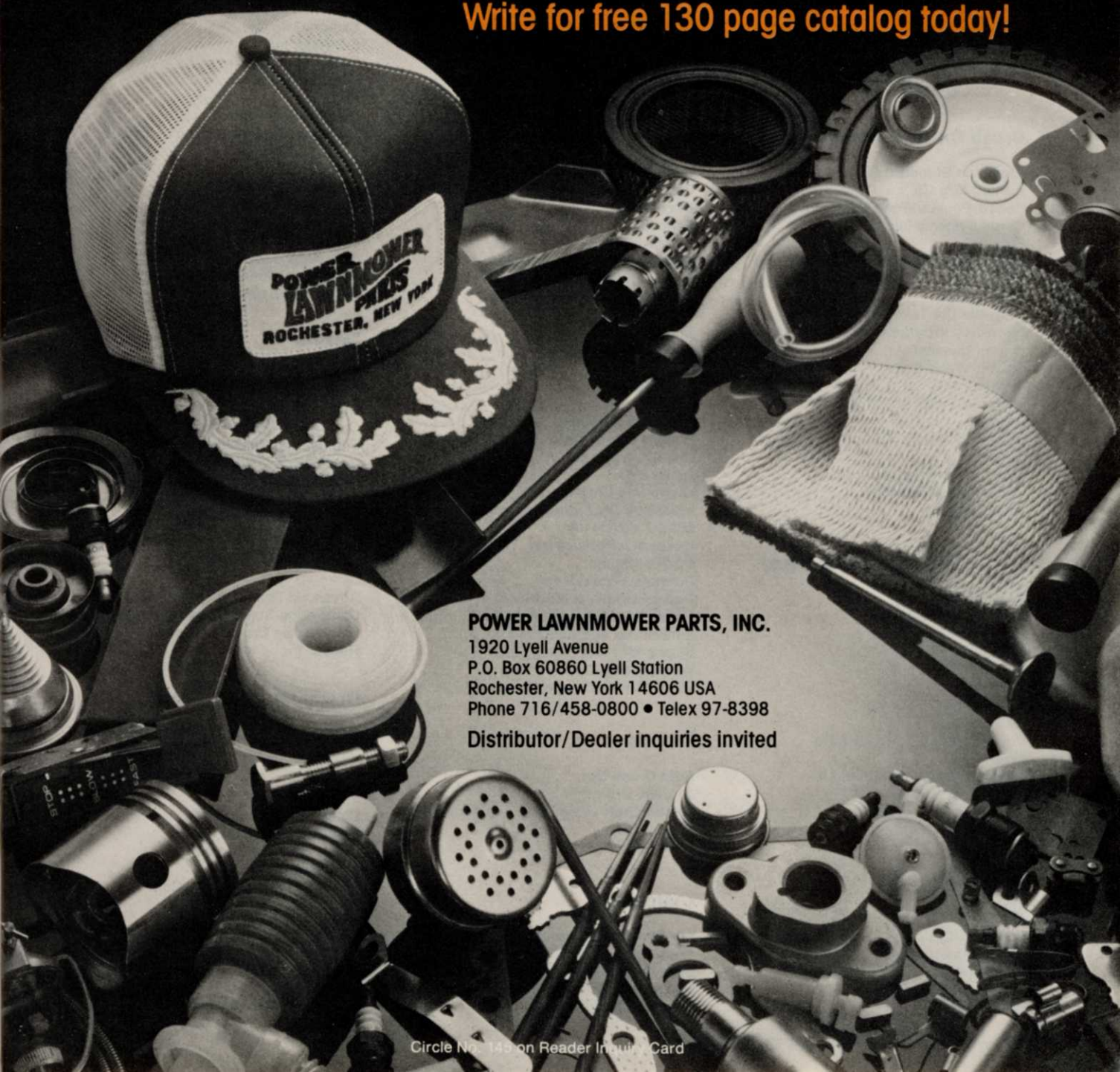
Atwater Strong Div
Beaird-Poulan/Weed Eater Div
Billy Goat Industries Inc
Bunton Co
Finn Corp
Giant Vac Mfg Inc
Goodall Div Bunton Co
HMC/Green Machine
Homelite Div Textron Inc
Jacobsen Div Textron Inc
Lawn-Boy Product Group

Depend on us...

to deliver your order complete 99.6% of the time!

Fact: we manufacture and stock the largest inventory, so virtually all orders are shipped complete! Over 40,000 distributors and dealers worldwide depend on us to keep their shelves full. The fact is, no other company can make that statement and back it up with service. And new this year, the Atom Electronic Ignition, and chain saw replacement parts. Plus many new additions to our lawnmower line. Depend on us to be your one source for quality, service...and profit all year long!

Write for free 130 page catalog today!



POWER LAWNMOWER PARTS, INC.
1920 Lyell Avenue
P.O. Box 60860 Lyell Station
Rochester, New York 14606 USA
Phone 716/458-0800 • Telex 97-8398

Distributor/Dealer inquiries invited

Circle No. 145 on Reader Inquiry Card

Equipment

continued

MTD Products Inc
Olathe Mfg Inc
Orion Chemical Inc
Parker Sweeper Co
Poulan/Weed Eater
Ransomes Inc
Sensation Corp
Stihl Inc
Toro Co Commercial Prods
Turf Vac Corp
Vandermolen Corp
Yard Vac Prods Inc

Bridges

Continental Custom Bridge Co
Miracle Recreation Equipment Co
Western Cascade Inc

Brush Cutters, Hand Held

American Standard Co
Bartlett Mfg Co
Beaird-Poulan/Weed Eater Div
Citrus Systems Inc
Echo Inc
Halls Safety Equipment Inc
HMC/Green Machine
Hoffco Inc
Homelite Div Textron Inc
Lawn-Boy Product Group
Orion Chemical Inc
Poulan/Weed Eater
Seymour Mfg Co
Seymour Smith & Son Inc
Solo Inc
Stanley Hydraulic Tools
Stihl Inc
Toro Co Commercial Prods
Union Fork & Hoe Co
Yazoo Mfg Co

Brush Cutters, Right-of-Way

Bombardier Ltd
Roscoe Brown Corp
Bush Hog Implements
Citrus Systems Inc
Kershaw Mfg Co
Kinco Mfg
National Hydro-Ax Inc
Rhino Products Inc
Royer Foundry & Machine Co
Tiger Corp
Turner International (Eng) Ltd
Union Fork & Hoe Co
Vemco Corp of America
Woods Div Hesston Corp

Bucket Lifts

Asplundh Mfg Div
Correct Mfg Corp
Guest Industries Inc
Hi-Ranger
Mobile Aerial Towers Inc
Pitman Div
Promark Products Inc
Spyder Sales Inc

Chain Saws

Alpina North America
Beaird-Poulan/Weed Eater Div
Black & Decker Mfg Co
Buck Haven Industries Inc
Citrus Systems Inc
Clinton Engines Corp
Deere & Co
Echo Inc
Fairmont Hydraulics
HMC/Green Machine
Homelite Div Textron Inc
Limb-Lopper Div/Robinson Ind
Milwaukee Electric Tool Corp
Poulan/Weed Eater
Skil Corp
Solo Inc
Stanley Hydraulic Tools
Stihl Inc

Chain Saw Parts

Beaird-Poulan/Weed Eater Div
Buck Haven Industries Inc
Clinton Engines Corp
Deere & Co
Echo Inc
Hoffco Inc
Milwaukee Electric Tool Corp
Poulan/Weed Eater
Power Lawnmower Parts Inc
Skil Corp
Stihl Inc

Chippers

Asplundh Mfg Div
Roscoe Brown Corp
Chipmore Mfg Co
Didier Mfg
Lindig Mfg Corp
Medallion Div Farmhand Inc
Mitts & Merrill Inc
Morbark Industries Inc
Olathe Mfg Inc
Promark Products Inc
Royer Foundry & Machine Co
Safety Test & Equipment Co
Sidewinder International Inc
Strong Mfg Co
Vermeer Mfg Co
Wood/Chuck Chipper Corp

Cranes

Auto Crane Co
J I Case Drott Div
Master Craft Industrial Equipment Corp
Pitman Div
Reach-All Mfg

Cultivators

Allegheny International Hardware Group
Ariens Co
Beaird-Poulan/Weed Eater Div
Bomford & Evershed Ltd
Brillion Iron Works
Engineering Products Co
Gravely
HMC/Green Machine
Howard Rotovator Co
International Harvester Co
Kubota Tractor Corp
Lambert Corp
Massey-Ferguson
MTD Products Inc
Toro Co Commercial Prods
Tradewinds Inc
Union Fork & Hoe Co
Yazoo Mfg Co

Dethatchers

BlueBird Int'l Inc
Brinly-Hardy Co
J I Case
Cushman Ryan/OMC Lincoln
Exmark Mfg Co.
E-Z Rake Inc
Fuerst Brothers Inc
Giant Vac Mfg Inc
Hahn Inc
Howard Rotovator Co
Jacobsen Div Textron Inc
F D Kees Mfg Co
Kinco Mfg
Mathews Co
Parker Sweeper Co
Power Lawnmower Parts Inc
Ryan Turf/OMC Lincoln
Sensation Corp
Toro Co Commercial Prods
Vemco Corp of America

Dozers

Auburn Consolidated Industries Inc
Bomford & Evershed Ltd
Roscoe Brown Corp
Caterpillar Tractor Co
Engineering Products Co
Grasshopper Co
International Harvester Co
Little Giant Products Inc
Yanmar Tractor (USA) Inc

Drainage Tubing

Advanced Drainage Systems Inc
Cambridge Soil Services of America
Francesville Drain Tile Corp
Hancor Inc

Dredgers

Mud Cat National Car Rental System

Drills

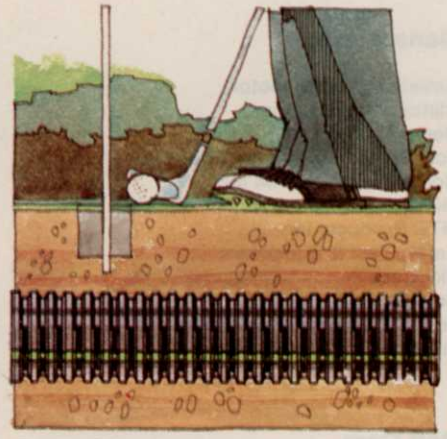
Black & Decker Mfg Co
Dynamic Industries Inc
Halls Safety Equipment Inc
McMillen Div
Milwaukee Electric Tool Corp
Skil Corp

Dusters

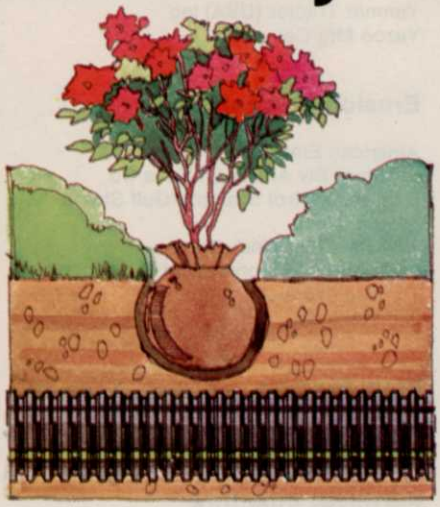
John Blue Co
Buffalo Turbine Agricultural Equip Co

ADS Drainage Tubing

It's dependably tough for your toughest turf jobs.

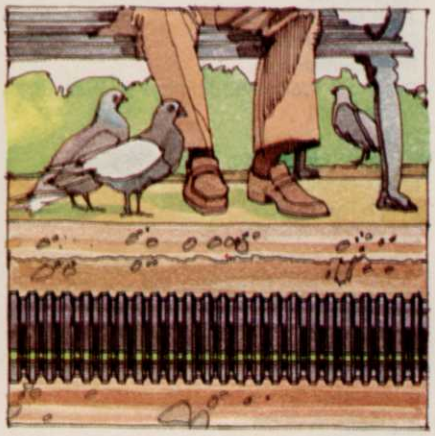


Flexible ADS drains your greens.



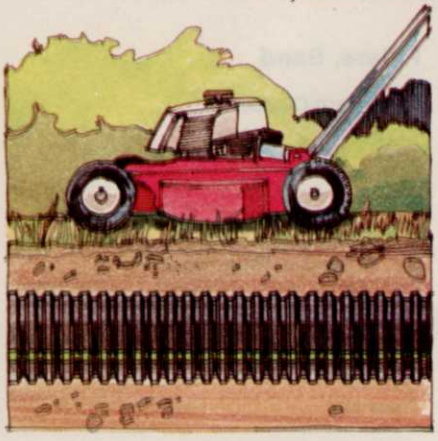
ADS helps maintain beautiful landscapes.

ADS keeps your athletic fields dry.



ADS controls water runoff in heavily trafficked areas.

Sandy soils call for ADS Drain Guard® — the nylon filter that won't block or clog.



ADS tubing — a small part of your turf care budget.

Whether you buy or sell turf care products, you want quality. That's why ADS polyethylene tubing is your best bet. For healthy soil, drainage is important. Strong and durable, ADS tubing provides years of trouble-free drainage, and helps maintain stable soil systems.

ADS is easy to install, requiring less labor and no heavy machinery. A flexible tubing, it follows ground contours and adapts to underground obstacles. And, ADS tubing won't rot, rust or break down during handling or backfilling. A full line of accessory fittings and couplings help simplify even the most challenging installations.

At a cost of just pennies per foot, ADS means quality AND value.

This season rely on ADS drainage tubing. You deserve the best.

SPECIFICATIONS

ASTM F-405, Standard Specification for Corrugated Polyethylene Tubing and Fittings. **SCS,** National Engineering Standard, Code 606. **ASTM F-667,** Standard Specification for 10", 12" and 15" Corrugated Polyethylene Tubing.

Look for the ADS green stripe

It's your sign of quality — #1 in the land.

To serve your drainage needs, ADS operates 21 manufacturing plants nationwide, and the eight regional sales offices listed below:

Madera, CA	209-674-0903
Iowa City, IA	319-338-3689
Bellevue, WA	206-643-2770
Monticello, IL	217-762-9448
Atlanta, GA	404-393-0602
Napoleon, OH	419-599-0585
Livermore, KY	502-733-4324
Palmer, MA	413-283-9797

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ADS®

ADVANCED DRAINAGE SYSTEMS, INC.

Corporate Office
3300 Riverside Drive
Columbus, Ohio 43221
(614) 457-3051

For additional product and technical information, contact your nearest ADS sales office.

Equipment

continued

Bush Hog Implements
B & W Sales & Mktg Assoc
Echo Inc
Encap Products Co
FMC Corp
HMC/Green Machine
H D Hudson Mfg Co Professional Prods Div
Root-Lowell Corp
D B Smith & Co
Solo Inc
Stihl Inc
Westheffer Co

Edgers

Allegheny International Hardware Group
Ariens Co
Beaird-Poulan/Weed Eater Div
Bunton Co
Deere & Co
Echo Inc
Excel Industries Inc
Goodall Div Bunton Co
HMC/Green Machine
Hoffco Inc
K-D Manitou Inc
MTD Products Inc
Orion Chemical Inc
Patrician Products Inc
Poulan/Weed Eater
Ransomes Inc
Stihl Inc
Toro Co Commercial Prods
Turfco Mfg Inc
Union Fork & Hoe Co
Yazoo Mfg Co

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American Honda Motor
Briggs & Stratton Corp
Bunton Co
Caterpillar Tractor Co
Citrus Systems Inc
Clinton Engines Corp
Goodall Div Bunton Co
International Harvester Co
Kawasaki Motors USA Corp Engine Div
Kohler Co Engine Div
Kubota Tractor Corp
Orion Chemical Inc
Power Spray Technology Inc
Strong Ent Inc
Tecumseh Products Co Engine Div
Teledyne Total Power
Toro Co Commercial Prods
Yanmar Tractor (USA) Inc

Engine Parts

Briggs & Stratton Corp
Buck Haven Industries Inc
Bunton Co
Caterpillar Tractor Co
Clinton Engines Corp
Echo Inc
Goodall Div Bunton Co
Hoffco Inc
Orion Chemical Inc
Power Lawnmower Parts Inc
Power Spray Technology Inc
Strong Ent Inc
Tecumseh Products Co Engine Div

Yanmar Tractor (USA) Inc
Yazoo Mfg Co

Erosion Control Fabric

American Enka Co
Enkamat Div American Enka Co
Erosion Control Systems/Gulf States Paper Corp
Hoechst Fibers Industries
International Reforestation Suppliers Inc
Turfibre Products
Jim Walls Co

Fault Finders

Progressive Electronics

Fertilizer Injectors

Agrotec Inc
John Blue Co
Chemilizer Products Inc
Ross Daniels Inc
Dragon Irrigation Equipment by Wes-Co
Fert-O-Ject
Holly Filter
Hydroflo Corp
Inject-O-Meter Mfg Co
Jaeco Pump Co
Minnesota Wanner Co
National Chemsearch
Power Spray Technology Inc
Raindrip Inc
Smith Precision Products
Strong Ent Inc
Trees Inc
Westheffer Co
Hermann A Wirth
Young Industries

Filters, Sand

Laval Corp Claude

Foggers

Agrotec Inc
B & G Equipment Co
B & W Sales & Mktg Assoc
FMC Corp
National Chemsearch
Raindrip Inc
Root-Lowell Corp
Stihl Inc
Trees Inc

Forklifts

Brouwer Turf Equipment Ltd
Roscoe Brown Corp
Bush Hog Implements
Caterpillar Lift Trucks
Caterpillar Tractor Co
Clark Equipment Co Melroe Div
Deere & Co
Dynamic Industries Inc
Edwards Equipment Co
International Harvester Co
K-D Manitou Inc
Master Craft Industrial Equipment Corp
Princeton Mfg Co
Spyder Sales Inc

Generators

American Honda Motor
Clinton Engines Corp
Deere & Co
Ford Motor Co Tractor Operations
Homelite Div Textron Inc
Milwaukee Electric Tool Corp
MTD Products Inc
Safety Test & Equipment Co
Skil Corp
Solo Inc
Toro Co Commercial Prods
Trees Inc

Golf Cars

Club Car Inc
Columbia Car Corp
Electric Carrier Corp
E-Z-Go Golf Car
Go-Fore
Melex USA Inc
Nordco Electric Vehicles
Professional Turf Specialties
Taylor-Dunn Mfg Co
Yamaha Motor Corp

Golf Course Accessories

Clean City Squares Inc
Fox Valley Marking Systems Inc
Carl Heald Inc
Lakeshore Equipment & Supply
Par Aide Products
A G Stafford
Standard Golf Co
Strong Ent Inc

Grass Pavers

Guest Industries Inc
Presto Products Inc
Turfgrass Products

Hose & Reels

Agrotec Inc
Allegheny International Hardware Group
Anchor/Swan Corp
Bowie Industries Inc
Citrus Systems Inc
Deere & Co
Encap Products Co
Finn Corp
FMC Corp
Friend Mfg Corp
Clifford B Hannay & Son Inc

Tough mowers... from rough cut to smooth finish.

Built for the commercial user, to assure lowest operational cost through efficient design, low fuel consumption, low maintenance, and long life. Built to take the hard usage of the commercial mower operator and the environment in which the commercial mower functions.

kut-kwick

Brunswick, Georgia 31520
Telephone 912/265-1630

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New Dursban 50W. Awesome bug control is here.

Now DURSBAN* insecticide, with three formulations, gives you awesome control of bugs, grubs, mites, chiggers, ticks, fleas and weevils.

New DURSBAN 50W is a wettable powder especially for professionals who prefer lower phytotoxicity in treating turf, ornamentals and trees. The elimination of chemical solvents makes this possible. DURSBAN 50W gives extended residual control...eight weeks and more compared to four or six weeks with most other brands.

So now you can do the whole job with DURSBAN 2E, concentrated 4E and new DURSBAN 50W wettable powder. That assures you of maximum bug control and minimum inventory problems.

With all the advantages, you'd expect DURSBAN to cost more. Actually it costs less than most other brands. You can treat 1,000 sq. ft. for only 35¢! And when you use DURSBAN, it means fewer callbacks and more satisfied customers. That's a big step in the right direction.

DURSBAN products are available from your Dow distributor. Also ask him about our "DURSBAN delivers the goods" incentive program. Be sure to read and follow all label directions and precautions. Agricultural Products Department, Midland, Michigan 48640.

DURSBAN 50W

Now you're a giant step ahead.

DOW

Dow Chemical U.S.A.

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3915

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Equipment

continued

Hanson Equipment Co
H D Hudson Mfg Co Professional Prods Div
Marco Sprayers
Master Sprayers Inc
Melnor Industries
Orion Chemical Inc
Power Spray Technology Inc
Professional Turf Specialties
Strong Ent Inc
Swan Hose
Toro Co Commercial Prods
Trees Inc
Westheffer Co

Insect Killers, Electrical

Deere & Co
Devpro Machine Inc Insectocutor Div
Insect-O-Cutor Inc
Vandermolen Corp

Irrigation, Drip

Aquatic Irrigation Systems Inc
Chapin Watermatics Inc
Dayni Controls Mfg Co
Hendrix & Dail Inc
Holly Filter
Irri-Trol Mfg Co
Jaeco Pump Co
Orion Chemical Inc
Raindrip Inc
Richdel Inc
Royal Coach/Buckner
Submatic Irrigation Systems

Irrigation, Injection

John Blue Co
Ross Daniels Inc
Dayni Controls Mfg Co
Dragon Irrigation Equipment by Wes-Co
Fert-O-Ject
Inject-O-Meter Mfg Co
Jaeco Pump Co
Orion Chemical Inc
Royal Coach/Buckner

Irrigation, Mobile

Ag-Rain Inc
Royal Coach/Buckner
Travelrain Sprinkler

Irrigation Systems & Supplies

Ag-Rain Inc
AMETEK/Plymouth Prods Div
Aquatic Irrigation Systems Inc
Aquaturf
Champion Brass Mfg Co
Champion Sprinkler Mfg Co
Dayni Controls Mfg Co
Dema Engineering Co
Fert-O-Ject
Holly Filter
Hydroflo Corp
Hydro Rain
Irri-Trol Mfg Co
Irrometer Co
King Brothers Industries
Lakeshore Equipment & Supply
Laval Corp Claude
Lumenite Electronic Co
McDowell Mfg Co
National Irrigation Specialists
L R Nelson Corp
Orion Chemical Inc
Parker Interior Plantscape
Rain Bird Sprinkler Mfg Corp
Raindrip Inc
Rain-O-Mat Sprinklers Inc
Richdel Inc
Royal Coach/Buckner
Safe-T-Lawn Inc
Submatic Irrigation Systems
Thompson Mfg Co
Toro Co Commercial Prods
Toro Co Irrigation Div
Weather-matic

Landscape Design Kits

American Stamp Co
Miracle Recreation Equipment Co
Raindrip Inc

Leaf Burners

Bock Industries Inc

Lighting Systems

Barebo Inc Otterbine
Columbia Cascade Timber
GTE Sylvania
Intermatic Inc
Landscape Forms Inc
Lighting Prods Div McGraw-Edison Co
Little Giant Pump Co Sub Tecumseh Prods Co
Musco Sports-Lighting Inc
Orion Chemical Inc
Richway Industries
Spring City Electric Mfg Co
Westinghouse Electric Corp Lamp Div

Litter Receptacles

BigToys
Clean City Squares Inc
Columbia Cascade Timber
Friend Mfg Corp
Kay Park Rec Corp
Lakeshore Equipment & Supply
Landscape Forms Inc

Loaders

American Trencher
Atwater Strong Div
Auburn Consolidated Industries Inc
Bush Hog Implements
J I Case
J I Case Drott Div
Caterpillar Tractor Co
Clark Equipment Co Melroe Div
Deere & Co
Dynamic Industries Inc
Engineering Products Co
Ford Motor Co Tractor Operations
International Harvester Co
Kubota Tractor Corp
Little Giant Products Inc
Long Mfg NC Inc
Massey-Ferguson
Prentek Corp
Sperry New Holland
Spyder Sales Inc
Steiner Corp
Tiger Corp
Yanmar Tractor (USA) Inc

Log Splitters

Bush Hog Implements
J I Case
Custom Products of Litchfield Inc
Deere & Co
Didier Mfg
Dynamic Industries Inc
Ford Motor Co Tractor Operations
Giant Vac Mfg Inc
Hanson Equipment Co
Kubota Tractor Corp
La Font Corp
Lindig Mfg Corp
Morbark Industries Inc
MTD Products Inc
Poulan/Weed Eater
Promark Products Inc
Vermeer Mfg Co
W-W Grinder Inc
Yanmar Tractor (USA) Inc

Markers, Field

B & G Equipment Co
Laurie Carlson & Assoc
Richway Industries

Measuring Wheels

Agrotec Inc
Gandy Co
Professional Turf Specialties
Rolatape Corp
Safety Test & Equipment Co
Westheffer Co

Mist Blowers

Agrotec Inc
John Blue Co
Buffalo Turbine Agricultural Equip Co
B & W Sales & Mktg Assoc
Echo Inc
Encap Products Co
FMC Corp
Friend Mfg Corp
Hanson Equipment Co
HMC/Green Machine
H D Hudson Mfg Co Professional Prods Div
Orion Chemical Inc
Solo Inc
Stihl Inc
Strong Ent Inc
Vandermolen Corp
Westheffer Co

RAIN BIRD®

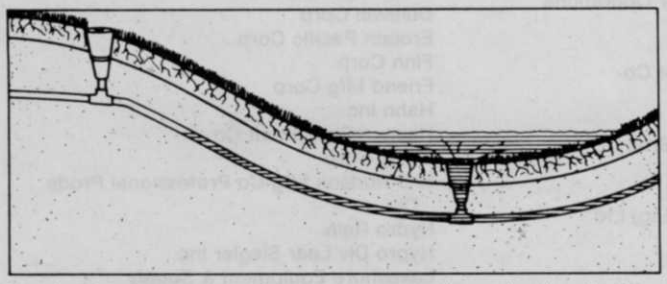
THE SPRINKLER FAMILY THAT MAKES LIFE EASIER.

MINI-PAW sprinklers offer low trajectory throw and superior performance with low gallonage operation.

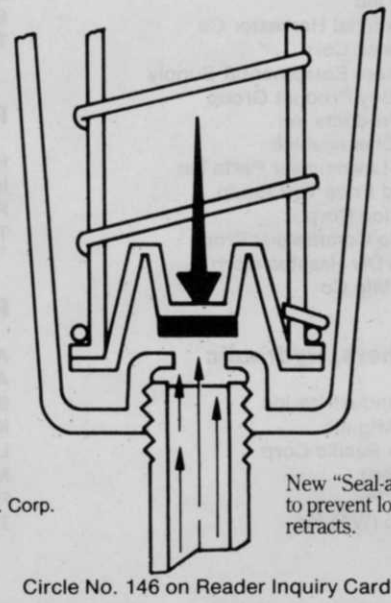
MINI-PAW sprinkler performance is boosted with new nozzles that provide "Short Range" and full or part circle performance out to 40 feet.

Just about every irrigation professional is familiar with the Rain Bird MINI-PAW® pop-up sprinkler. The word is out that the MINI-PAW 15103 outperforms its competition six-to-one, efficiently covering the same area as six conventional spray heads. That means installers have less pipe and fewer valves to worry about and simplier operation and quicker installation to look forward to.

Now Rain Bird technology makes life even easier with three new MINI-PAW models that incorporate the same precision engineering that went into the original—with a few added bonuses. Rain Bird had added low head drainage prevention, short range performance and full or part circle throw out to 40 feet. More than ever, the MINI-PAW family is simply better.



Low head drainage occurs when water seeps out lowest head on the line. New "Seal-a-Matic" option prevents this problem.



New "Seal-a-Matic" option closes inlet to prevent low head drainage when sprinkler retracts.

RAIN BIRD SALES, INC.
Turf Division
145 North Grand Avenue
Glendora, CA 91740 USA
(213) 963-9311

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Equipment

continued

Moisture Sensors

Hinds Int'l Inc
Hydro Terra Corp
Melnor Industries
Soilmoisture Equipment Corp

Mowers, Flail

Bomford & Evershed Ltd
Brillion Iron Works
Dynamic Industries Inc
Edwards Equipment Co
Excel Industries Inc
FMC Corp
Ford Motor Co Tractor Operations
Gravely
Haban Mfg Co
International Harvester Co
Jacobsen Div Textron Inc
Kubota Tractor Corp
Mathews Co
MoTrim Inc
Mott Corp
Turner International (Eng) Ltd
Vemco Corp of America
Woods Div Hesston Corp
Yanmar Tractor (USA) Inc
Yazoo Mfg Co

Mowers, Reel

Brouwer Turf Equipment Ltd
FMC Corp
Hahn Inc
Jacobsen Div Textron Inc
Locke Mfg Inc
MTD Products Inc
National Mower Co
Howard Price Turf Equip
Ransomes Inc
Roseman Mower Corp
Toro Co Commercial Prods
Yazoo Mfg Co

Mowers, Rotary

American Honda Motor
Ariens Co
Atlas Tool & Mfg Co
Auburn Consolidated Industries Inc
Bomford & Evershed Ltd
Bunton Co
Bush Hog Implements
J I Case
Cushman Ryan/OMC Lincoln
Deere & Co
Edwards Equipment Co
Engineering Products Co
Excel Industries Inc
Exmark Mfg Co.
FMC Corp
Ford Motor Co Tractor Operations
Giant Vac Mfg Inc
Goodall Div Bunton Co
Grasshopper Co
Gravely
Haban Mfg Co
Heckendorn Mfg Co
International Harvester Co
Jacobsen Div Textron Inc
F D Kees Mfg Co
Kubota Tractor Corp
Kut-Kwick Corp
Lawn-Boy Product Group
Long Mfg NC Inc
Massey-Ferguson
MoTrim Inc
MTD Products Inc
Nunes Mfg
Orion Chemical Inc
Howard Price Turf Equip
Ransomes Inc
Rhino Products Inc
Ryan Turf/OMC Lincoln
Sarlo Power Mowers Inc
Sensation Corp
Sensation Div Gilson Bros Co
Smithco Inc
Snapper Products Equipment
Solo Inc
Steiner Corp
Terrain King Corp
Tiger Corp
Toro Co Commercial Prods
Tradewinds Inc
Turner International (Eng) Ltd
Woods Div Hesston Corp
Yazoo Mfg Co

Mowers, Sickle Bar

Ford Motor Co Tractor Operations
Gravely
Haban Mfg Co
International Harvester Co
Kinco Mfg
MoTrim Inc
Sensation Div Gilson Bros Co
Solo Inc
Sperry New Holland
Turner International (Eng) Ltd

Mower Parts

Ariens Co
Buck Haven Industries Inc
Bunton Co
Cushman Ryan/OMC Lincoln
Goodall Div Bunton Co
Hoffco Inc
International Harvester Co
Kut-Kwick Corp
Lakeshore Equipment & Supply
Lawn-Boy Product Group
MTD Products Inc
Orion Chemical Inc
Power Lawnmower Parts Inc
Howard Price Turf Equip
Sensation Corp
Toro Co Commercial Prods
Woods Div Hesston Corp
Yazoo Mfg Co

Mulchers, Hydraulic

Bowie Industries Inc
Cellin Mfg Inc
Erocon Pacific Corp
Finn Corp
Reinco Inc
Weldco (WA) Inc

Net Layers

Nunes Mfg
Robark

Netting

J A Cissel Co
Conwed Corp
Ross Daniels Inc
Delmarva Textile Co
International Reforestation Suppliers Inc
Turfibre Products

Netting, Erosion Control

American Enka Co
Conwed Corp
Delmarva Textile Co
Enkamat Div American Enka Co
Erosion Control Systems/Gulf States Paper Corp
International Reforestation Suppliers Inc
Turfibre Products

Nozzles & Accessories

Agrotec Inc
B & G Equipment Co
Bowie Industries Inc
B & W Sales & Mktg Assoc
Citrus Systems Inc
Delavan Corp
Erocon Pacific Corp
Finn Corp
Friend Mfg Corp
Hahn Inc
Hanson Equipment Co
Hotsy Corp
H D Hudson Mfg Co Professional Prods Div
Hydro Rain
Hypro Div Lear Siegler Inc
Lakeshore Equipment & Supply
Liqui*Lawn Corp
Master Sprayers Inc
Melnor Industries
Power Spray Technology Inc
Safe-T-Lawn Inc
D B Smith & Co
Spraying Systems Co
Strong Ent Inc
Tri-Con Inc

Patio & Walkway Materials

Hoechst Fibers Industries
Interlocking Paver Mfrs Assoc
Presto Products Inc
Turfgrass Products

Picnic Tables

Algoma Net Co-Div Gleason Corp
American Approved Equipment
BigToys
Kay Park Rec Corp
Landscape Forms Inc
Miracle Recreation Equipment Co
Playworld Systems
Trojan Playground Equipment Mfg Co

GET THE TRIMMER/ CUTTERS WITH THE STRONGEST ROOTS.

HOFFCO HEAVY-DUTY BRUSHCUTTER, EARLY FIFTIES.

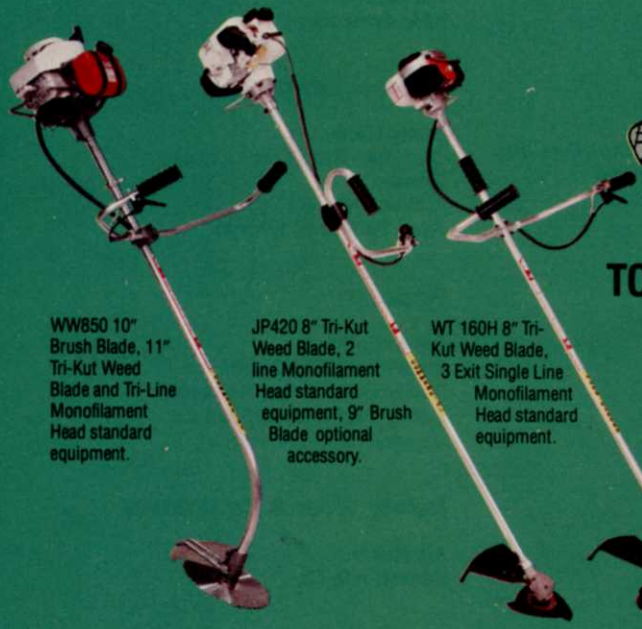
In 1952, Hoffco built a special gasoline-powered portable brushcutter for the U.S. Forestry Service: A fast, dependable way to clear firebreaks and save trees.

In 1972, Hoffco engineered and built the first gasoline-powered monofilament line trimmer for homeowners: A quicker, better way to trim along walls and edge along walks.

In 1983, Hoffco makes the only full line of gasoline-powered trimmer/cutters: Faster, easier ways to trim grass, cut weeds, clear brush.

You get gasoline-powered portable clearing equipment that handles the tough jobs, the easy ones and everything in between. You get a well-engineered, quality-made product that works right and holds up. You get parts service you can depend on for years to come.

You can get it all from Hoffco, the company with the strongest roots. Ready for the growing seasons ahead.



WW850 10" Brush Blade, 11" Tri-Kut Weed Blade and Tri-Line Monofilament Head standard equipment.

JP420 8" Tri-Kut Weed Blade, 2 line Monofilament Head standard equipment, 9" Brush Blade optional accessory.

WT 160H 8" Tri-Kut Weed Blade, 3 Exit Single Line Monofilament Head standard equipment.

TOUGH ON THE JOB. EASY ON YOU.

Hoffco, Inc. • Dept. WTT4-983 • 358 N.W. "F" St. • Richmond, IN 47374

Circle No. 125 on Reader Inquiry Card

Equipment

continued

Pipe

Advanced Drainage Systems Inc
Long Mfg NC Inc

Planters

Clean City Squares Inc
Columbia Cascade Timber
Deep Root Corp
Ellis Mfg Co
International Harvester Co
Landscape Forms Inc
Miracle Recreation Equipment Co
Parker Interior Plantscape

Plants & Trees

Parker Interior Plantscape

Play Structures

American Approved Equipment
BigToys
Columbia Cascade Timber
Delmer F Harris Co
Landscape Forms Inc
Miracle Recreation Equipment Co
Playworld Systems
Trojan Playground Equipment Mfg Co

Plows, Sand Trap

Dedoes Industries Inc
Jacobsen Div Textron Inc
Toro Co Commercial Prods

Pools, Decorative

Fiberglass Unlimited Inc

Post Drivers

Deere & Co
Dynamic Industries Inc
Guest Industries Inc
McMillen Div
Nunes Mfg
Rhino Sales Corp
Shaver Mfg Co
Union Fork & Hoe Co

Post Hole Diggers

Allegheny International Hardware Group
Bush Hog Implements
Clark Equipment Co Melroe Div
Deere & Co
Feldmann Engineering & Mfg Co
Ford Motor Co Tractor Operations
Ground Hog Inc
HMC/Green Machine
Hoffco Inc
Kenyon Mfg Inc
Kubota Tractor Corp
McMillen Div
Don Savage Co
Seymour Mfg Co
Shaver Mfg Co
Stihl Inc
Union Fork & Hoe Co
Yanmar Tractor (USA) Inc

Pressure Gauges

Agrotec Inc
Citrus Systems Inc
Friend Mfg Corp
Irrometer Co
Master Sprayers Inc
Minnesota Wanner Co
Power Spray Technology Inc
Professional Turf Specialties
Strong Ent Inc

Pressure Washers

Agrotec Inc
John Blue Co
Broyhill Co
Citrus Systems Inc
Deere & Co
Ford Motor Co Tractor Operations
Friend Mfg Corp
Hanson Equipment Co
Hotsy Corp
Marco Sprayers
Minnesota Wanner Co
National Chemsearch
Northeast Industries Inc
Sioux Steam Cleaner Corp
D B Smith & Co
Solo Inc
Strong Ent Inc
Westheffer Co

Pruners

Allegheny International Hardware Group
American Standard Co
Bartlett Mfg Co
Citrus Systems Inc
Deere & Co
Echo Inc
Fairmont Hydraulics
Florian Pruners
Friend Mfg Corp
Halls Safety Equipment Inc
HMC/Green Machine
International Reforestation Suppliers Inc
Limb-Lopper Div/Robinson Ind
Safety Test & Equipment Co
Seymour Smith & Son Inc
Union Fork & Hoe Co
D J Wilson Co
Hermann A Wirth

Pumps

Agrotec Inc
Aquaturf
Barebo Inc Otterbine
John Blue Co
Bowie Industries Inc
Broyhill Co
Citrus Systems Inc
Clinton Engines Corp
Encap Products Co
FMC Corp
Ford Motor Co Tractor Operations
Friend Mfg Corp
Hahn Inc
Hanson Equipment Co
Homelite Div Textron Inc
Hotsy Corp
H D Hudson Mfg Co Professional Prods Div
Hydroflo Corp
Hypro Div Lear Siegler Inc
Jaeco Pump Co
Kembro Inc
Little Giant Pump Co Sub Tecumseh Prods Co
Master Sprayers Inc
Minnesota Wanner Co
Orion Chemical Inc
Parco Div Blue Mountain Prod Inc
Peerless Pump
Power Spray Technology Inc
Professional Turf Specialties
Solo Inc
Stanley Hydraulic Tools
Strong Ent Inc
Trees Inc
Westheffer Co

Rakes, Landscape

Allegheny International Hardware Group
Cushman Ryan/OMC Lincoln
Ford Motor Co Tractor Operations
Glenmac Inc
Kenyon Mfg Inc
Roseman Mower Corp
Rugg Mfg Co
Toro Co Commercial Prods
Union Fork & Hoe Co
Yanmar Tractor (USA) Inc
York Rakes Div York Modern Corp

Rain Sensors

Hydro Terra Corp

Rock Pickers

Glenmac Inc
KEM Enterprises

Rollers, Lawn

Brinly-Hardy Co
Cushman Ryan/OMC Lincoln
Gandy Co
Jackson Mfg Co
Ryan Turf/OMC Lincoln

Rope

Bartlett Mfg Co
Halls Safety Equipment Inc
Power Lawnmower Parts Inc
Safety Test & Equipment Co
Samson Cordage Works

Safety Wear & Equipment

Agrotec Inc
Bartlett Mfg Co

Choose the utility tractor that'll best measure up to your jobs.

There's hardly any grounds maintenance job too big for the new John Deere 2150 and 2350 Utility Tractors. These 45- and 55-PTO-hp models are totally John Deere designed and built to stand up to jobs many utility tractors back away from.

They're equipped with standard features you'd expect to find only on larger, more expensive tractors. Proven John Deere features that add up to the kind of reliability we've built a tradition on.

Like our smooth-running, fuel-efficient diesel engines. Both the 3- and 4-cylinder in the 2150 and 2350, respectively, are built tough for years of hard work and high productivity.

Shift on-the-go with the synchronized transmission featuring 8 forward and 4 reverse speeds. Double the number of speeds by choosing the Hi-Lo option. An optional shuttle-shift lets you change direction without clutching.

For jobs that require extra traction, choose the optional mechanical front-wheel drive. It engages on-the-go with the push of a button, and works together with the rear differential lock to boost traction.

John Deere closed-center hydraulics respond instantly to tough work demands. The high-pressure system provides hydraulic muscle for steering, braking, 3-point-hitch implements, remote cylinders and hydraulic motors.

The 2150 and 2350 are "human engineered" to enhance operator productivity. Features like a deluxe adjustable seat, color-coded controls, and hand and foot throttles help shorten long days.

Outfit the tractors with capacity-matched John Deere implements to speed up almost any job. And choose optional equipment to exactly suit your needs.

For the name of the nearest dealer, or a free folder on the John Deere diesel utility tractors, call 800-447-9126 toll free (800-322-6796 in Illinois) or write John Deere, Dept. 69, Moline, Illinois 61265.

JOHN DEERE

Nothing Runs Like A Deere®

Circle No. 111 on Reader Inquiry Card

Equipment

continued

Custom Products of Litchfield Inc
Edmont Div Becton Dickinson & Co
Fox Valley Marking Systems Inc
Friend Mfg Corp
Halls Safety Equipment Inc
Norton Co Safety Products Div
Safety Test & Equipment Co
D B Smith & Co
Westheffer Co

Saws

Allegheny International Hardware Group
Bartlett Mfg Co
Citrus Systems Inc
Fairmont Hydraulics
Halls Safety Equipment Inc
International Reforestation Suppliers Inc
Limb-Lopper Div/Robinson Ind
Milwaukee Electric Tool Corp
Safety Test & Equipment Co
Skil Corp
Seymour Smith & Son Inc
Stanley Hydraulic Tools
Union Fork & Hoe Co

Scrapers

Allegheny International Hardware Group
Bomford & Evershed Ltd
Eversman Mfg Co
International Harvester Co
Kenyon Mfg Inc
Massey-Ferguson
Union Fork & Hoe Co
York Rakes Div York Modern Corp

Screeners

Lindig Mfg Corp
Royer Foundry & Machine Co

Seeders

Allegheny International Hardware Group
Bowie Industries Inc
Brillion Iron Works
Buffalo Turbine Agricultural Equip Co
Cushman Ryan/OMC Lincoln
Cyclone Seeder Co
Encap Products Co
Erocon Pacific Corp
Finn Corp
Gandy Co
Hahn Inc
Herd Seeder Co
Jacobsen Div Textron Inc
Lakeshore Equipment & Supply
Lambert Corp
Lawnmaker Mfg Co
Meredith Seed Miser
Olathe Mfg Inc
O M Scott & Sons Proturf Div
Solo Inc
Trac N Combo
Vaughan's Seed Co
Vicon Farm Machinery Inc

Seeders, Hydraulic

Bowie Industries Inc
Erocon Pacific Corp
Finn Corp
Friend Mfg Corp
Reinco Inc
Solarcell Land & Bldg Inc
Trac N Combo
Weldco (WA) Inc

Sharpeners

Power Lawnmower Parts Inc

Shears

Allegheny International Hardware Group
American Standard Co
Deere & Co
International Reforestation Suppliers Inc
Limb-Lopper Div/Robinson Ind
Safety Test & Equipment Co
Seymour Smith & Son Inc
Stanley Hydraulic Tools
Union Fork & Hoe Co
D J Wilson Co
Hermann A Wirth

Shelters

Koppers Co
Miracle Recreation Equipment Co
Poligon Div W H Porter Inc

Snow Blowers

American Honda Motor
Ariens Co
Atlas Tool & Mfg Co
Beaird-Poulan/Weed Eater Div
Roscoe Brown Corp
Bunton Co
J I Case
Cushman Ryan/OMC Lincoln
Deere & Co
Dynamic Industries Inc
Excel Industries Inc
Ford Motor Co Tractor Operations
Goodall Div Bunton Co
Grasshopper Co
Gravely
Haban Mfg Co
Hanson Equipment Co
International Harvester Co
Jacobsen Div Textron Inc
Kubota Tractor Corp
Lawn-Boy Product Group
Little Giant Products Inc
MTD Products Inc
Sensation Div Gilson Bros Co
Solo Inc
Steiner Corp
Sweepster
Toro Co Commercial Prods
Wheel Horse Products Inc
Yanmar Tractor (USA) Inc
Yazoo Mfg Co

Snow Plows

Ariens Co
Bomford & Evershed Ltd
Roscoe Brown Corp
Bunton Co
J I Case
Clark Equipment Co Melroe Div
Deere & Co
Goodall Div Bunton Co
Gravely
International Harvester Co
Howard Price Turf Equip
Swenson Spreader Co
Toro Co Commercial Prods
Western Products

Sod Cutters

Allegheny International Hardware Group
Beck Mfg Co
Brouwer Turf Equipment Ltd
Cushman Ryan/OMC Lincoln
Guest Industries Inc
Ryan Turf/OMC Lincoln
Turfco Mfg Inc

Sod Equipment

Brouwer Turf Equipment Ltd
Fuerst Brothers Inc
Kenyon Mfg Inc
Nunes Mfg
Presto Products Inc
Raverty's Sod Blades

Sod Harvester

Beck Mfg Co
Brouwer Turf Equipment Ltd
Nunes Mfg
Princeton Mfg Co

Soil Fumigation

Citrus Systems Inc
Hendrix & Dail Inc

Soil Mixers

Roscoe Brown Corp
Howard Rotovator Co
Lindig Mfg Corp
Royer Foundry & Machine Co
Trees Inc

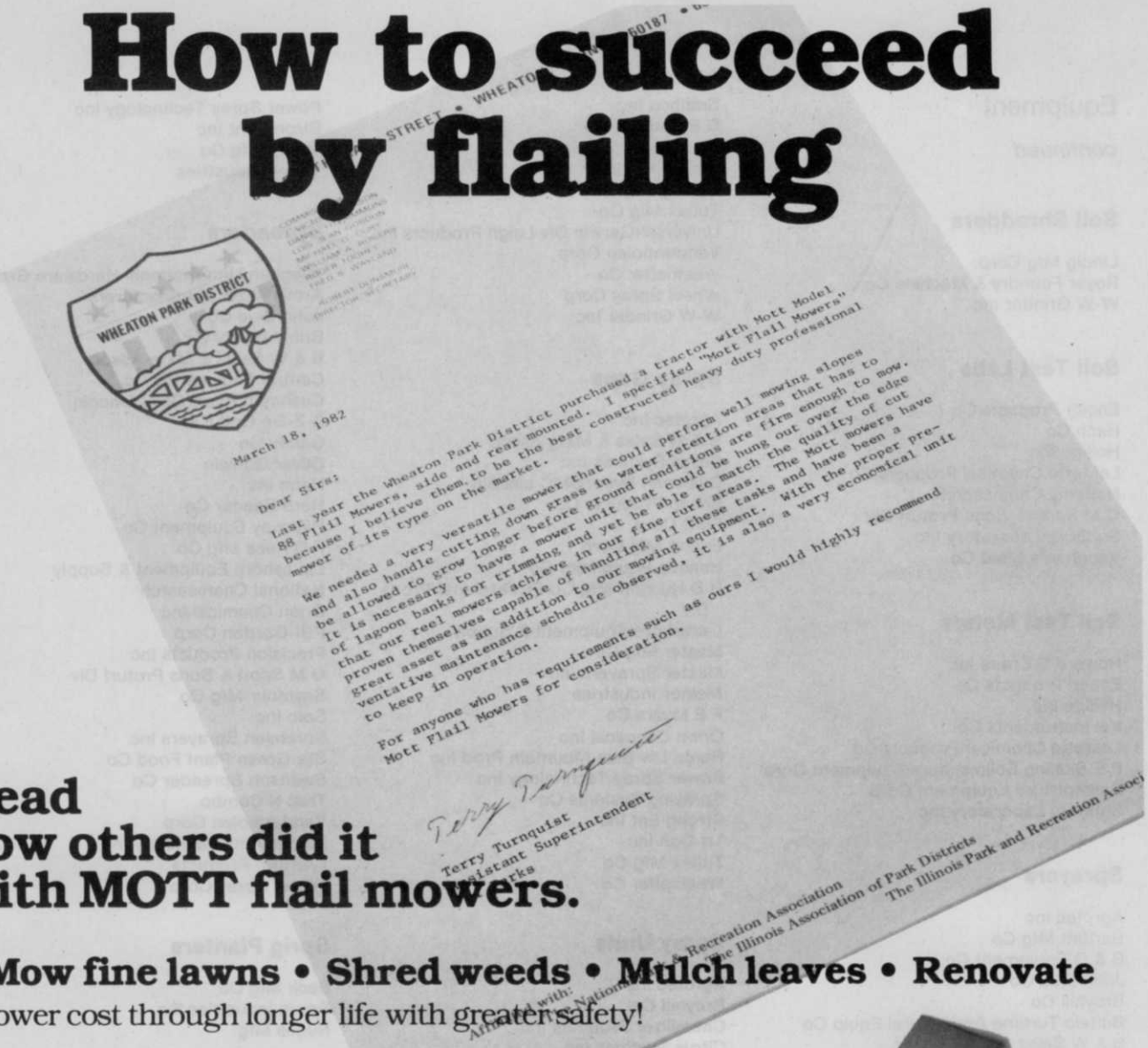
Soil Moisture Sensing Equipment

Dayni Controls Mfg Co
Encap Products Co
Hydro Terra Corp
Irrometer Co
Kel Instruments Co
Lumenite Electronic Co
Soilmoisture Equipment Corp

Soil Sampler

Clements Associates Inc
National Chemsearch
P E Skaling Soilmoisture Equipment Corp
Soilmoisture Equipment Corp
Turfgrass Products

How to succeed by flailing



Read how others did it with MOTT flail mowers.

• Mow fine lawns • Shred weeds • Mulch leaves • Renovate
at lower cost through longer life with greater safety!

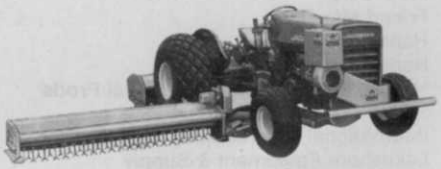
Improve your grounds maintenance operation with MOTT Flail Mowers. Call or write today for your free brochure, "How to Succeed by Flailing."

T-38
38" pull type, self-powered, gangable to 9'

38", 48", 60"
For tractors up to 25 PTO h.p. maximum

Heavy Duty
48", 60", 72"
fine cut only, reversible

Super Heavy Duty
48", 60", 74", 88"
fine or coarse cut for higher h.p. tractors.



Interstater®
48", 60", 74", 88" units
fine or coarse cut
single or dual sides

mott® HAMMER KNIFE®

the original safety flail mowing system

MOTT CORPORATION

500 Shawmut Avenue • P.O. Box 514 • LaGrange, Illinois 60525 • (312) 354-7720

Circle No. 165 on Reader Inquiry Card

Equipment

continued

Soil Shredders

Lindig Mfg Corp
Royer Foundry & Machine Co
W-W Grinder Inc

Soil Test Labs

Encap Products Co
Hach Co
Hellige Inc
LaMotte Chemical Products Co
National Chemsearch
O M Scott & Sons Proturf Div
Sudbury Laboratory Inc
Vaughan's Seed Co

Soil Test Meters

Howard S Crane Inc
Encap Products Co
Hellige Inc
Kel Instruments Co
LaMotte Chemical Products Co
P E Skaling Soilmoisture Equipment Corp
Soilmoisture Equipment Corp
Sudbury Laboratory Inc

Sprayers

Agrotec Inc
Bartlett Mfg Co
B & G Equipment Co
John Blue Co
Broyhill Co
Buffalo Turbine Agricultural Equip Co
B & W Sales & Mktg Assoc
Laurie Carlson & Assoc
Citrus Systems Inc
Cushman Ryan/OMC Lincoln
Dedoes Industries Inc
Echo Inc
Encap Products Co
E-Z-Go Golf Car
E-Z Rake Inc
FMC Corp
Friend Mfg Corp
Hahn Inc
Hanson Equipment Co
H D Hudson Mfg Co Professional Prods Div
International Reforestation Suppliers Inc
Lakeshore Equipment & Supply
Liqui*Lawn Corp
Marco Sprayers
Master Mfg Co
Master Sprayers Inc
Melnor Industries
Micron Corp
Minnesota Wanner Co
F E Myers Co
National Chemsearch
Olathe Mfg Inc
Parco Div Blue Mountain Prod Inc
Power Spray Technology Inc
Professional Turf Specialties
Reinco Inc
RIGO Co
Smithco Inc
D B Smith & Co
Solo Inc
Strong Ent Inc
Strong Mfg Co
Tuflex Mfg Co
Universal-Gerwin Div Leigh Products Inc
Vandermolen Corp
Westheffer Co
Wheel Spray Corp
W-W Grinder Inc

Spray Guns

Agrotec Inc
B & W Sales & Mktg Assoc
Citrus Systems Inc
Cushman Ryan/OMC Lincoln
Encap Products Co
FMC Corp
Friend Mfg Corp
Hanson Equipment Co
H D Hudson Mfg Co Professional Prods Div
Lakeshore Equipment & Supply
Master Mfg Co
Master Sprayers Inc
Melnor Industries
F E Myers Co
Orion Chemical Inc
Parco Div Blue Mountain Prod Inc
Power Spray Technology Inc
Spraying Systems Co
Strong Ent Inc
Tri-Con Inc
Tuflex Mfg Co
Westheffer Co

Spray Units

Agrotec Inc
Broyhill Co
Chemilizer Products Inc
Citrus Systems Inc
Encap Products Co
FMC Corp
Friend Mfg Corp
Hahn Inc
Hanson Equipment Co
Hill's Liqui-Systems
H D Hudson Mfg Co Professional Prods Div
Master Sprayers Inc
Melnor Industries
Minnesota Wanner Co
Northeast Industries Inc
Orion Chemical Inc
Parco Div Blue Mountain Prod Inc
Power Spray Technology Inc
Professional Turf Specialties
Sorensen Sprayers Inc
Strong Ent Inc
Trebor Corp
Tri-Con Inc
Tuflex Mfg Co
Westheffer Co
Wheel Spray Corp

Spray Units, Mixer Proportioners

Agrotec Inc
B & G Equipment Co
Chemilizer Products Inc
FMC Corp
Power Spray Technology Inc
Strong Ent Inc
Tuflex Mfg Co
Young Industries

Spreaders

Allegheny International Hardware Group
Arctic Mizer Manufacturers
John Blue Co
Brinly-Hardy Co
B & W Sales & Mktg Assoc
Central Engineering Co
Cushman Ryan/OMC Lincoln
E-Z-Go Golf Car
Gandy Co
Oliver Godwin
Hahn Inc
Herd Seeder Co
Highway Equipment Co
F D Kees Mfg Co
Lakeshore Equipment & Supply
National Chemsearch
Orion Chemical Inc
PBI-Gordon Corp
Precision Products Inc
O M Scott & Sons Proturf Div
Seymour Mfg Co
Solo Inc
Sorensen Sprayers Inc
Sta-Green Plant Food Co
Swenson Spreader Co
Trac N Combo
Vandermolen Corp
Vicon Farm Machinery Inc
Western Products
Wheel Spray Corp

Sprig Planters

Beck Mfg Co
Bowie Industries Inc
Nunes Mfg

Straw Blowers

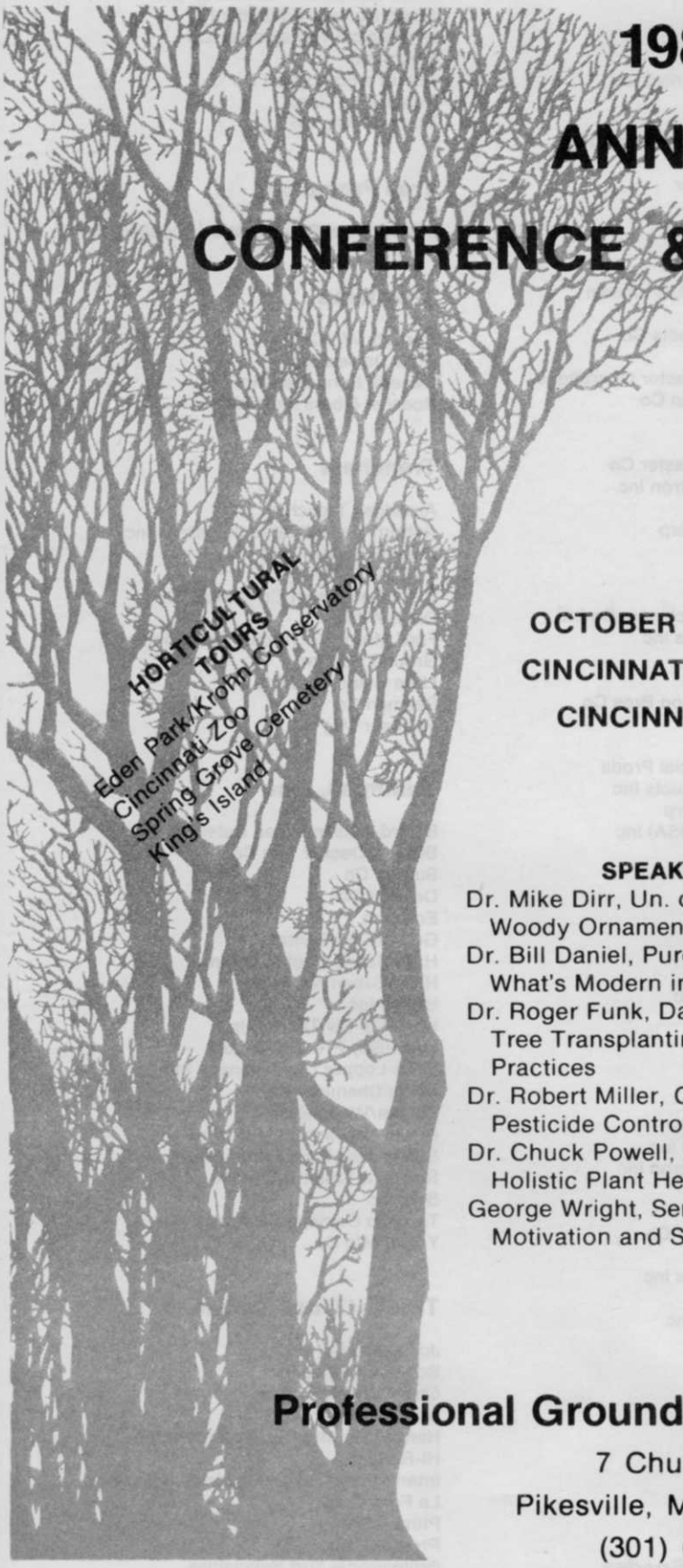
Bowie Industries Inc
Finn Corp
Reinco Inc

Stump Cutters

Heckendorn Mfg Co
Lindig Mfg Corp
Olathe Mfg Inc
Promark Products Inc
Vermeer Mfg Co

Sweepers

Ariens Co
Atwater Strong Div
Billy Goat Industries Inc
Brouwer Turf Equipment Ltd
J I Case
Central Engineering Co
Dynamic Industries Inc
Giant Vac Mfg Inc
Gravely
Jacobsen Div Textron Inc
Lambert Corp
Little Giant Products Inc
Mathews Co



1983 ANNUAL CONFERENCE & TRADE SHOW

HORTICULTURAL TOURS

Eden Park/Krohn Conservatory
Cincinnati Zoo
Spring Grove Cemetery
King's Island

OCTOBER 17, 18, 1983
CINCINNATI MARRIOTT
CINCINNATI, OHIO

EXHIBITORS

3M Agricultural Products
Loft's Seed Company
Cushman-Ryan/OMC Lincoln
Northrup King
Miller Chemical & Fertilizer Corp.
The Andersons
Advanced Drainage Systems, Inc.
Geo. W. Hill & Company, Inc.

SPEAKERS

Dr. Mike Dirr, Un. of Georgia
Woody Ornamentals for Zones 4, 5, 6
Dr. Bill Daniel, Purdue Un.
What's Modern in Sport's Turf
Dr. Roger Funk, Davey Tree Co.
Tree Transplanting & Fertilization Practices
Dr. Robert Miller, Chemlawn Corp.
Pesticide Controversy
Dr. Chuck Powell, Ohio State Un.
Holistic Plant Health Management
George Wright, Service Eng. Assoc.
Motivation and Self Management

PROFESSIONAL GROUNDS MANAGEMENT SOCIETY • 1911 •
PGMS

Professional Grounds Management Society

7 Church Lane
Pikesville, Maryland 21208
(301) 653-2742

Circle No. 127 on Reader Inquiry Card

Equipment

continued

MTD Products Inc
Nunes Mfg
Olathe Mfg Inc
Parker Sweeper Co
Precision Products Inc
Steiner Corp
Sweepster
Tennant Co
Toro Co Commercial Prods
Tuflex Mfg Co
Turf Vac Corp
Yard Vac Prods Inc
Yazoo Mfg Co

Tanks, Fiberglass

Agrotec Inc
Broyhill Co
Citrus Systems Inc
Fiberglass Unlimited Inc
Friend Mfg Corp
Hanson Equipment Co
Hydroflo Corp
Jaeco Pump Co
Kay Park Rec Corp
Marco Sprayers
Master Sprayers Inc
F E Myers Co
Orion Chemical Inc
Power Spray Technology Inc
Professional Turf Specialties
Sorensen Sprayers Inc
Strong Ent Inc
Westheffer Co

Tanks, Metal

Agrotec Inc
John Blue Co
Broyhill Co
Clinton Engines Corp
Finn Corp
Friend Mfg Corp
H D Hudson Mfg Co Professional Prods Div
Hydroflo Corp
Kay Park Rec Corp
Minnesota Wanner Co
Professional Turf Specialties
Strong Ent Inc
Westheffer Co

Tillers, Tractor-Mounted

Howard Rotovator Co

Tool Boxes

Deere & Co
Handy Mandy Mfg
Milwaukee Electric Tool Corp
Nevr-Rust Tool-Tainer Inc
Reading Body Works Inc
Rotocast Plastic Products Inc

Topdresser

John Blue Co
Cushman Ryan/OMC Lincoln
E-Z-Go Golf Car
Hahn Inc
Olathe Mfg Inc
Turfco Mfg Inc
Vicon Farm Machinery Inc

Tractors & Attachments

American Trencher
Ariens Co
Roscoe Brown Corp
Bunton Co
J I Case
Cushman Ryan/OMC Lincoln
Deere & Co
Engineering Products Co
FMC Bolens Corp
Ford Motor Co Tractor Operations
Goodall Div Bunton Co
Gravely
Haban Mfg Co
International Harvester Co
Jacobsen Div Textron Inc
K-D Manitou Inc
Kubota Tractor Corp
Long Mfg NC Inc
Massey-Ferguson
McMillen Div
Mitsubishi AG Machinery Co Ltd
Morbark Industries Inc
MTD Products Inc
Ransomes Inc
Sensation Div Gilson Bros Co
Steiner Corp
Tiger Corp
Toro Co Commercial Prods
Wheel Horse Products Inc
Yamaha Motor Corp
Yanmar Tractor (USA) Inc
Yazoo Mfg Co

Trailers

Ariens Co
John Blue Co
Bock Industries Inc
Deere & Co
Ditch Witch
Eagle Vehicles Inc
E-Z-Go Golf Car
Giant Vac Mfg Inc
Handy Mandy Mfg
Holsclaw Brothers Inc
Jacobsen Div Textron Inc
Lifetime Products
Magline Inc
Minnesota Wanner Co
Olathe Mfg Inc
Precision Products Inc
Prentek Corp
Rivlex Industries Inc
Snowco
Trans-Tree Corp
Wells Cargo Inc
Yazoo Mfg Co

Traps, Animal

Woodstream Corp

Tree Movers, Spades

Big John Tree Transplanter Mfg Inc
Caretree Systems Inc
Clark Equipment Co Melroe Div
Clegg Nursery Equipment
Mechanical Transplanter Co
Rokor Inc
Schutt's Equipment Co
Trans-Tree Corp
Vermeer Mfg Co

Tree Protectors

International Reforestation Suppliers Inc

Tree Wrap

Bartlett Mfg Co
Ross Daniels Inc
General Bandages Inc
Hoechst Fibers Industries

Trenchers

American Trencher
Auburn Consolidated Industries Inc
Roscoe Brown Corp
J I Case Drott Div
Clark Equipment Co Melroe Div
Ditch Witch
Ford Motor Co Tractor Operations
Ground Hog Inc
Little Giant Products Inc
Seaman Co
Vermeer Mfg Co

Trimmers, Line

Beaird-Poulan/Weed Eater Div
Black & Decker Mfg Co
Bunton Co
Deere & Co
Echo Inc
Goodall Div Bunton Co
Halls Safety Equipment Inc
HMC/Green Machine
Hoffco Inc
Homelite Div Textron Inc
Lawn-Boy Product Group
Limb-Lopper Div/Robinson Ind
Orion Chemical Inc
Poulan/Weed Eater
Power Lawnmower Parts Inc
Safety Test & Equipment Co
Seymour Smith & Son Inc
Stihl Inc
Toro Co Commercial Prods
Yazoo Mfg Co

Trucks/Truck Bodies

John Blue Co
Bock Industries Inc
Chevrolet Motor Div
Handy Mandy Mfg
Henderson Mfg Div Waycrosse Inc
Hi-Ranger
International Reforestation Suppliers Inc
La Font Corp
Pitman Div
Prentek Corp
Professional Turf Specialties
Reading Body Works Inc
Rokor Inc
Strong Ent Inc

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IT CAN'T BE DRIVEN INTO THE GROUND.

Put a Kubota diesel tractor to work and watch it go. Watch it load, mow, rotary till and dig. There's just one thing that you'll rarely see a Kubota do. Quit.

That's because it's powered by a strong diesel engine. It operates with less noise. Less vibration. And with no carburetor, spark plugs or distributor to wear out, there's less maintenance.

There's still another reason Kubota tractors keep running on and on and on. These small and mid-sized models all come with features usually only found on larger tractors.

The L355SS model digging in here is a good example. A 4-cylinder 29 PTO diesel workhorse, it does all kinds of commercial landscaping, industrial and loader tractor jobs.

And the L355SS is the only tractor of its size with hydraulic shuttle-shift. It goes from forward to reverse without using the clutch or gearshift. Thanks to power steering and our unique 4-wheel-drive system with bevel gears, this tractor is also remarkably maneuverable in a tight spot.

The L355SS and all Kubota B- or L-Series models are guaranteed to be dependable for a long time. Our two-year limited warranty is unmatched by other manufacturers. Your dealer has complete details.

So stop by your Kubota dealer soon. While you can't drive our tractors into the ground, you can take 'em for a test drive.

KUBOTA
Nothing like it on earth.

Circle No. 213 on Reader Inquiry Card

Equipment

continued

Turf Blocks

Grass Pavers Ltd
Presto Products Inc
Turfgrass Products

Vacuums

Atwater Strong Div
Billy Goat Industries Inc
Central Engineering Co
Echo Inc
E-Z Rake Inc
Giant Vac Mfg Inc
Lambert Corp
Milwaukee Electric Tool Corp
MTD Products Inc
Nunes Mfg
Parker Sweeper Co
Steiner Corp
Toro Co Commercial Prods
Turf Vac Corp
Woods Div Hesston Corp
Yard Vac Prods Inc

Vehicles, All-Terrain

Carl Heald Inc

No need to own, load, haul and use plows, discs, rotary tillers, blades, drags or harrows to do the job.

Just one implement, the Roseman Tiller-Rake does the complete job quickly, efficiently and perfectly. Adjust pitch control wheel to scarify hardest ground, to till, pulverize, grade spread and finish-rake.

From rough construction sites to perfect seedbeds at tremendous savings in time, labor, equipment and cost.

Thousands of satisfied users. Order yours today.

Roseman Tractor Equipment Co.

2620 Crawford Avenue, Evanston, Illinois, U.S.A.

Circle No. 148 on Reader Inquiry Card

Vehicles, Electric

Eagle Vehicles Inc

Vehicles, Turf

Bajaj America Inc
Cushman Ryan/OMC Lincoln
E-Z-Go Golf Car
Hahn Inc
Carl Heald Inc
F E Myers Co
Olathe Mfg Inc
Professional Turf Specialties
Rivlex Industries Inc
Toro Co Commercial Prods
Yamaha Motor Corp

Vibratory Plows

J I Case Drott Div
Ditch Witch
Turfco Mfg Inc

Washers, Pressure

Sioux Steam Cleaner Corp

2. Equipment Companies

★Advanced Drainage Systems Inc
3300 Riverside Dr
Columbus OH 43221
614-457-3051

Ag-Rain Inc
600 S Schrader
Havana IL 62644
309-543-4425

Agrotec Inc
Hwy 35 N
PO Box 49
Pendleton NC 27862
919-585-1222

Algoma Net Co
1525 Mueller St
Algoma WI 54201
414-487-5577

Allegheny International Hardware Group
PO Box 3500
Shiremanstown PA 17011
717-737-1500

Alpina North America
Box 301
Northport WA 99157
604-367-9202

★American Enka Co
Enka NC 28728
704-667-7668

American Honda Motor Co
100 W Alondra Blvd
Gardena CA 90247
213-327-8280

American Approved Equipment
American Playground Device Co
1801-31 S Jackson St
PO Drawer 2599
Anderson IN 46011
317-642-0288

American Stamp Co
PO Box 741
Reseda CA 91335
213-881-2808

American Standard Co
West St
PO Box 325
Plantsville CT 06479
203-628-9643

American Trencher
PO Box 266
Delhi IA 52223
319-922-2981

AMETEK/Plymouth Prods Div
502 Indiana Ave
Sheboygan WI 53081
414-457-9435

Anchor/Swan Corp
PO Box 509
Worthington OH 43085
614-548-6511

Aquamarine Corp
225 N Grand Ave
Waukesha WI 53186
414-547-0211

Aquatic Irrigation Systems Inc
619 E Gutierrez St Ste E
Santa Barbara CA 93103
805-965-5125

Aquaturf
11363 San Jose Blvd
Jacksonville FL 32217
904-268-6707

Arctic Mizer Manufacturers
2120 E Norwich St
St Francis WI 53207
414-744-4160

Ariens Co
655 W Ryan St
Brillion WI 54110
414-756-2141

Asplundh Mfg Div
50 E Hamilton St
Chalfont PA 18914
215-822-0542

Atlas Tool & Mfg Co
7100 S Grand Ave

EVERYTHING'S GREENER WHEN YOU TEAM-UP WITH PRO-LAWN

THE TOTAL TURF MANAGEMENT SERVICE

When it comes to professional, comprehensive turf management, no one can match the ability or commitment of Pro-Lawn and your Pro-Lawn Specialist.

Pro-Lawn Specialists are highly trained turf management experts with the know-how and long-term experience it takes to answer all your needs. And since there's a Pro-Lawn Specialist in your area, you get results—fast.

From informing you of the latest research findings, to turf problem analysis, to determining fertilizer, chemical and seed needs, to supplying a full selection of quality products, to ensuring fast delivery—your Pro-Lawn Specialist does it all. With the on-staff assistance of dedicated research technicians, scientists and state-of-the-art technology.

Unlike other turf companies that act as distributors for other people's products, Pro-Lawn not only distributes a variety of products, but also manufactures much of its own fertilizer and chemicals. And Pro-Lawn produces seed to provide custom seed mixing capabilities—to your specifications. This one source service means economy and efficiency; and assures you that Pro-Lawn's high quality standards are met everyday.

Whether you need technical services, an entire turf management program or simply a reliable supplier of turf maintenance products, send the coupon below to:

Pro-Lawn Products Inc.
PO Box 4908
Syracuse, NY 13221.

YES! I WANT A FREE PRO-LAWN TURF PRODUCTS CATALOG!

Business:_____

Attn:_____

Address:_____

City:_____ State:_____

Zip:_____ Phone:_____

Best Time to Call:_____ WT

Circle No. 166 on Reader Inquiry Card

BUNTON: WHEN YOU KNOW ONE...

Variable speed drive on tractors and self-propelled mowers independent of engine and blade-tip speed.

Finger-tip steering on self-propelled mowers and precision steering gear on tractors for highest maneuverability.

Blade engagement control.

Commercial engines matched to mower size and mowing conditions.

Pneumatic tires with puncture proof sealant on 32 inch widths and up.

Wide range of cutting heights.

Close trimming deck designs.

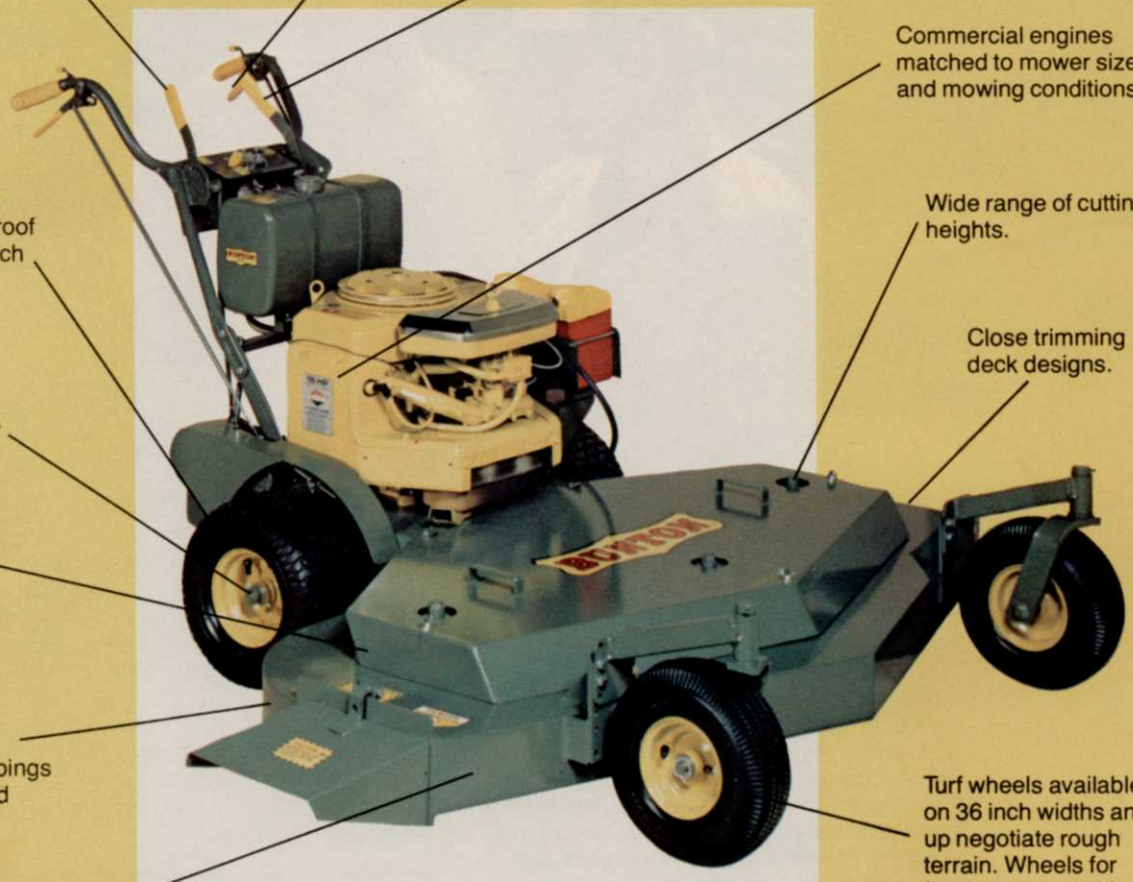
Roller bearing and grease fittings.

Heavy gage welded steel construction. Reinforced at stress points.

Suction-lift, sickle steel blades mulch and discharge clippings evenly to right hand side.

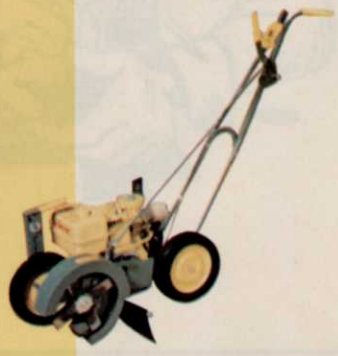
Turf wheels available on 36 inch widths and up negotiate rough terrain. Wheels for fine lawns available on 52 inch widths and smaller.

Large selection of cutting widths.



Contract numbers:
G.S.A.: GS-07S-07659
H.U.D.: OPH (CO)m-3650

YOU KNOW THEM ALL.



If you've ever been around people who are bragging about their "Bunton", you know how zealous they can be. The dependability . . . the fuel efficiency . . . the performance . . . the price . . . nothing but rave reviews.

Bunton builds 108 different mowers, each with different features to solve a specific lawn maintenance problem. The good news is that *all* Bunton lawn maintenance equipment is built the same way, whether you need turf tractors, self-propelled mowers, push mowers or edgers/trimmers.

Bunton builds specifically—and nothing but—high quality lawn and turf maintenance equipment. When you discover Bunton, you will understand why these mowers are the professionals' best friend.

Get to know one . . . today.

BUNTON®

Bunton builds 'em better!

BUNTON CO.

P.O. Box 33247
Louisville, KY 40232 U.S.A.
Phone 502/966-0550 • Telex 204-340

Circle No. 106 on Reader Inquiry Card

Equipment Companies

continued

St Louis MO 63111
314-353-7800

★ Atwater Strong Div
6284 Waterloo Rd
PO Box 68
Atwater OH 44201
216-947-2344

Auburn Consolidated Industries Inc
2100 S "J" St
Box 350
Auburn NE 68305
402-274-4911

Auto Crane Co
9260 Broken Arrow Expressway
Tulsa OK 74145
918-627-9475

Bajaj America Inc
1237 Gadsden St
Columbia SC 29201
803-779-5361

★ Barebo Inc Otterbine
Rd 1
PO Box 217
Emmaus PA 18049
215-965-6018

Bartlett Mfg Co
3003 E Grand Blvd
Detroit MI 48202
313-873-7300

Beaird-Poulan/Weed Eater
5020 Flourney-Lucas Rd
Shreveport LA 71139
318-688-4998

Beck Mfg Co
1510 Pumphrey Ave
PO Box 2014
Auburn AL 36830
205-821-4600

B & G Equipment Co
Applebutter Rd
Plumsteadville PA 18949
215-766-8811

Big John Tree Transplanter Mfg Inc
Hwy 110 E
PO Box 608
Heber Springs AR 72543
501-362-3272

BigToys
3113 S Pine St
Tacoma WA 98409
206-572-7611

Billy Goat Industries Inc
PO Box 308
Lee's Summit MO 64063
816-524-9666

Black & Decker Mfg Co
701 E Joppa Rd
Towson MD 21204

BlueBird Int'l Inc
2778 S Tejon
Englewood CO 80110
303-781-4458

John Blue Co
2800 Bob Wallace Ave
Huntsville AL 35805
205-536-5581

Bock Industries Inc
57540 SR 19 S
PO Box 1027
Elkhart IN 46515
219-295-8070

Bombardier Ltd
Valcourt PQ J0E 2L0
Canada
514-532-2211

Bomford & Evershed Ltd
Salford Priors
Evesham Worcs WR11 5SW
England
0789-773383

★ Bowie Industries Inc
PO Box 931
Bowie TX 76230
817-872-2286

Are you a Miser with Fertilizer?

If you're cutting down on your fertilizer and water bill,

OREGON GROWN CHEWINGS AND CREEPING RED FESCUE

is the grass you need. It's fine bladed and blends very well with other turf grasses. The fine fescues are noted for being real misers when it comes to low maintenance turf areas.

Use Oregon grown fine fescues for seeding or overseeding any turf area. It's the Miser grass!

OREGON FINE FESCUE COMMISSION

2140 Turner Rd. S.E. • Salem, Oregon 97302
503-585-1157

Circle No. 141 on Reader Inquiry Card

Briggs & Stratton Corp
PO Box 702
Milwaukee WI 53201
414-259-5333

Brillion Iron Works
7200 Park Ave
Brillion WI 54110
414-756-2121

Brinly-Hardy Co
340 E Main St
Louisville KY 40202
502-585-3351

★Brouwer Turf Equipment Ltd
Woodbine Ave, R R 2
Keswick ON L4P 3E9
Canada
416-476-4311

Roscoe Brown Corp
Rte 1 Box 48
Lenox IA 50851
515-333-4551

Broyhill Co
N Market Square
Dakota City NE 68731
402-987-3412

Buck Haven Industries Inc
Box 112
Northport WA 99157
604-367-7822

Buffalo Turbine Agricultural Equipment Co
Industrial Place
PO Box 150
Gowanda NY 14070
716-532-2272

★Bunton Co
601 E Indian Trail
Louisville KY 40213
502-966-0550

Bush Hog Implements
2501 Griffin Ave
Selma AL 36701
205-872-6261

B & W Sales & Mktg Assoc
4047-A Jonesboro Rd
Forest Park GA 30050
404-366-0957

Cambridge Soil Services of America
106 Robert Gene
Glencoe AL 35905
205-492-7847

Caretree Systems Inc
160 Outerbelt St
Columbus OH 43213
614-861-7775

Laurie Carlson & Assoc
PO Box 1465
Madison WI 53701
608-849-4770

J I Case Outdoor Power Equipment Div
119 S First St
Winneconne WI 54986
414-582-4455

J I Case Drott Div
PO Box 1087
Wausau WI 54401
715-359-6511

Caterpillar Lift Trucks
Mfg by Towmotor Corp
7800 Tyler Blvd
Mentor OH 44060
216-255-5611; 800-528-6050

Caterpillar Tractor Co
100 NE Adams
Peoria IL 61528

Cellin Mfg Inc
9610 Guston Cove Rd
Lorton VA 22079
703-690-1195

Central Engineering Co
4429 W State St
Milwaukee WI 53208
414-933-4567

Champion Brass Mfg Co
1406 N Naud St
Los Angeles CA 90012
213-221-2108

★Champion Sprinkler Mfg Co
1460 N Naud St

Circle No. 167 on Reader Inquiry Card

Equipment Companies

continued

Los Angeles CA 90012
213-221-2108

A B Chance Co
210 N Allen St
Centralia MO 65240
314-682-8509

Chapin Watermatics Inc
Box 298
Watertown NY 13601

Chemilizer Products Inc
12745 49th St N
Clearwater FL 33520
813-576-7211

Chevrolet Motor Div GMC
30007 Van Dyke Ave
Warren MI 48090
313-492-5566

Chipmore Mfg Co
6 Johnson Ct
Bay City MI 48706
517-894-4578

J A Cissel Co
Squankum Yellowbrook Rd
PO Box 339
Farmingdale NJ 07727
201-938-6600

Citrus Systems Inc
1300 E Hwy 50
Winter Garden FL 32787
305-656-6858

Clark Equipment Co Melroe Div
112 N University Dr
Fargo ND 58102
701-293-3220

★ Clean City Squares Inc
PO Box 6797
St Louis MO 63144
314-968-2950

Clean-Flo Laboratories Inc
4342 Shady Oak Road
Hopkins MN 55343
800-328-6656; 612-935-2137

Clegg Nursery Equipment
Box 252
Plainfield IL 60544
815-436-2357

Clements Associates Inc
RR 1 Box 162A
Newton IA 50208
515-792-8285

Clinton Engines Corp
Clark & Maple Sts
Maquoketa IA 52030
319-652-2411

Club Car Inc
PO Box 4658
Augusta GA 30907
404-863-3000

★ Columbia Car Corp
3110 International Ln
Madison WI 53704

Columbia Cascade Timber
1975 SW Fifth Ave
Portland OR 97201
503-223-1157

Continental Custom Bridge Co
Rte 5 Box 178
Alexandria MN 56308
612-852-7500

★ Conwed Corp
PO Box 43237
St Paul MN 55164
612-221-1100

Correct Mfg Corp
London Road Extension
Delaware OH 43015
614-363-1951

Howard S Crane Inc
Box 88
Oneida NY 13421
315-363-3390

★ Cushman Ryan/OMC Lincoln

PO Box 82409
Lincoln NE 68501
402-475-9581

Custom Products of Litchfield Inc
Box 718
Litchfield MN 55355
612-693-3221

Cyclone Seeder Co
PO Box 1649
Harrisburg PA 17105
717-234-6291

Ross Daniels Inc
1720 Fuller Rd
West Des Moines IA 50265
515-225-6471

Dayni Controls Mfg Co
18414 Eddy St
Northridge CA 91325
213-349-8367

★ Dedoes Industries Inc
1060 W West Maple
PO Box 575
Walled Lake MI 48088
313-624-7710

Deep Root Corp
7354 Bolsa Ave
Westminster CA 92683
714-898-0563

★ Deere & Co
John Deere Rd
Moline IL 61265
309-752-8000

Delavan Corp
811 Fourth St
West Des Moines IA 50265
515-274-1561

Delmarva Textile Co
254 N Rehoboth Blvd
Milford DE 19963
302-422-7531

Dema Engineering Co
10020 Big Bend Blvd
St Louis MO 63122
314-966-3533

Devpro Machine Inc
PO Box 46
Middleport NY 14105
716-735-7768

Didier Mfg
8630 Industrial Dr
Franksville WI 53126
414-886-0525

★ Ditch Witch
PO Box 66
Perry OK 73077
405-336-4402

Dragon Irrigation Equipment by Wes-Co
910-23rd Ave
Oakland CA 94606
415-534-3320

Dynamic Industries Inc
201 W Main Ave
Barnesville MN 56514
218-354-2211; 800-346-4858

Eagle Vehicles Inc
8181 Hoyle Ave
Dallas TX 75227
214-388-7431

Echo Inc
3150 MacArthur Blvd
Northbrook IL 60062
312-291-2819

Edmont Div Becton Dickinson & Co
1300 Walnut St
Coshocton OH 43812
614-622-4311

Edwards Equipment Co
4312 Main St
Yakima WA 98903
509-248-1770

Electric Carrier Corp
8603 Crownhill Ste 8
San Antonio TX 78209

Ellis Mfg Co
107 W Railroad St
PO Box 246
Verona WI 53593
608-845-6472

Encap Products Co
PO Box 278
Mt Prospect IL 60056
312-593-6464

Engineering Products Co (Power King)
2021 MacArthur Rd
PO Box 1510
Waukesha WI 53187
414-547-5558

Erocon Pacific Corp
PO Box 506
Enumclaw WA 98022
206-825-7217

Perfect Partners

IBDU® and Sulfur Coated Urea

A new concept in slow release fertilizers to give you high performance at an economical cost.

Now you can get all the performance of a slow release fertilizer at a cost lower than most other professional fertilizer products.

New IBDU/SCU™* mixes combine three nitrogen sources—IBDU, Sulfur Coated Urea and Urea—to give your turf short, intermediate and long nitrogen release. This three-stage release results in a constant, even rate of turf feeding that lasts for up to 90 days.

Yet the price of IBDU/SCU fertilizers is less than you would expect to pay.

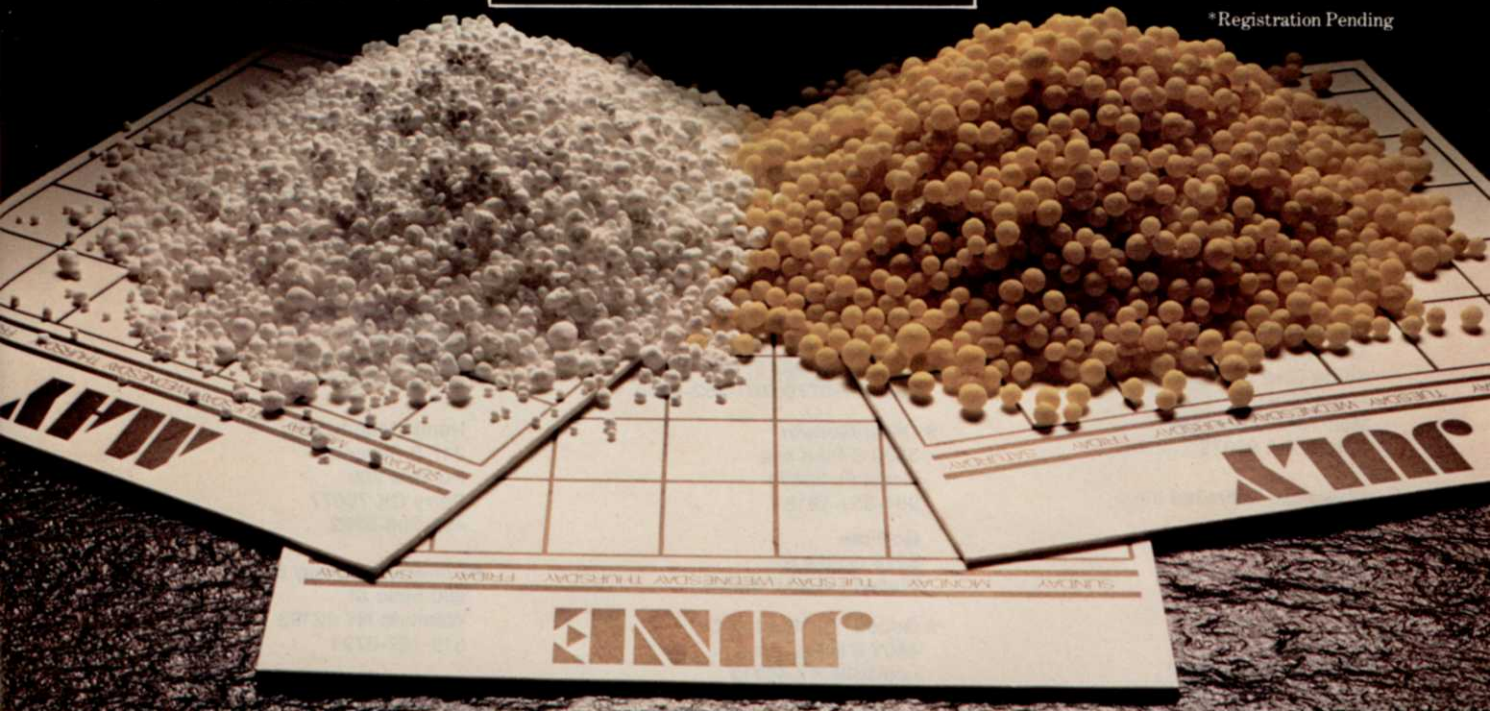
A First for Turf

New IBDU/SCU fertilizer mixes can provide your turf a combination of features never before available in a single fertilizer. It gives your turf all the benefits of IBDU, the highest performance slow release nitrogen available, with the proven benefits of a high quality prilled Sulfur Coated Urea. Plus, there's water soluble urea to get your turf off to a fast, green start. IBDU/SCU fertilizers are available in a variety of complete mixes, custom formulated to regional turf requirements.

See your local distributor or PAR EX representative about the new IBDU/SCU fertilizer mixes. They just might be the perfect partner for your fertilizer budget.

Estech, Inc.
Professional Products Division
P.O. Box 1996 Winter Haven, FL 33880

*Registration Pending



par ex®
PROFESSIONAL PRODUCTS

Circle No. 118 on Reader Inquiry Card

Equipment Companies

continued

Erosion Control Systems/Gulf States Paper Corp
PO Box 3199
Tuscaloosa AL 35404
205-553-6200

Eversman Mfg Co
PO Box 4345
Denver CO 80204
303-572-1140

★ Excel Industries Inc
PO Box 7000
Hesston KS 67062
316-327-4911

Exide Corp
101 Gibraltar Rd
Horsham PA 19044
215-674-9500

★ Exmark Mfg Co
Beatrice Industrial Park
PO Box 674
Beatrice NE 68310
402-223-4010

★ E-Z-Go Golf Car
Marvin Griffin Rd
PO Box 388
Augusta GA 30913-2699
404-798-4311

E-Z Rake Inc
1001 S Ransdell Rd
Lebanon IN 46052
317-482-1662

Fairmont Hydraulics Div Fairmont Railway Motors-Harsco Corp
415 N Main
Fairmont MN 56031
507-235-3361

Feldmann Engineering & Mfg Co
633 Monroe St
Sheboygan Falls WI 53085
414-467-6167

Fert-O-Ject
4701 Old San Jose Rd
Santa Cruz CA 95065
408-475-5122
Mail To: PO Box 889
Soquel CA 95073

Fiberglass Unlimited Inc
S Hwy 81
PO Box 1297
Watertown SD 57201
605-886-5137

★ Finn Corp
2525 Duck Creek Rd
Cincinnati OH 45208
513-871-2529; 800-542-7166

Florian Pruners
797 Mott Hill Rd
South Glastonbury CT 06073

FMC Bolens Corp
215 S Park St
Port Washington WI 53074

FMC Corp
5601 E Highland
Jonesboro AR 72401
501-935-1970

★ Ford Motor Co Tractor Operations
2500 E Maple Rd
Troy MI 48084
313-643-2000

Foresight Industries Inc
2114 Pioneer Ave
PO Box 4067
Cheyenne WY 82003
307-635-4163

Fox Valley Marking Systems Inc
172 S Northwest Hwy
Cary IL 60013
312-639-5744; 800-323-4770

Francesville Drain Tile Corp
PO Box 368
Francesville IN 47946
219-567-9133

Friend Mfg Corp
4441 Prospect St
PO Box A
Gasport NY 14067
716-772-2622

Fuerst Brothers Inc
PO Box 356
Oregon IL 61061
815-732-3239

Gandy Co
528 Gandrud Rd
Owatonna MN 55060
507-451-5430

General Bandages Inc
8300 Lehigh Ave
Morton Grove IL 60053
312-966-8383

Giant Vac Mfg Inc
Machine Shop Rd
South Windham CT 06266
203-423-7741

Gilson Bros Co (See Sensation)

Glenmac Inc
1805 Second Ave SW
PO Box 1398
Jamestown ND 58401
800-437-9779; 701-252-9300

★ Oliver Godwin
3530 S Pine Ave
Ocala FL 32671
904-351-1918

Go-Fore
8228 Goldie St
Walled Lake MI 48088

★ Goodall Div Bunton Co
4601 E Indian Trail
Louisville KY 40213
502-459-0550

Gould
Ten Gould Center
Rolling Meadows IL 60008
312-640-4000

Grand Rock Co
8805 East Ave
Mentor OH 44060
216-951-1967

★ Grasshopper Co
Old Hwy 81 S
Moundridge KS 67107
316-345-8621

Grass Pavers Ltd
3807 Crooks Rd
Royal Oak MI 48073
313-549-4046

Gravely
One Gravely Ln
Clemmons NC 27012
919-766-4721

Ground Hog Inc
25010 E Fifth St
San Bernardino CA 92410
714-888-2818

GTE Sylvania Lighting
Sylvania Lighting Center
Danvers MA 01923
617-777-1900

Guest Industries Inc
3601 Winsted Rd
Torrington CT 06790
800-243-5390; 203-482-1118 (CT)

Haban Mfg Co
2100 Nothwestern Ave
Racine WI 53404
414-637-8388

Hach Co
PO Box 389
Loveland CO 80539
800-525-5940

★ Hahn Inc
1625 N Garvin St
Evansville IN 47711
812-428-2027

Halls Safety Equipment Inc
Box 230
Grove City PA 16127
412-458-7202

Hancor Inc
401 Olive St
Findlay OH 45840
419-422-6521

Handy Mandy Mfg
317 S Seventh
PO Box 269
Perry OK 73077
405-336-5222

★ Clifford B Hannay & Son Inc
600 Main St
Westerlo NY 12193
518-797-3791

Hanson Equipment Co
301 Charles St
South Beloit IL 61080
815-389-2261

Harley-Davidson (See Columbia Car Corp)

Delmer F Harris Co
517 Broadway
PO Box 278
Concordia KS 66901
913-243-3321

★Carl Heald Inc
PO Box 1148
Benton Harbor MI 49022
616-849-3400

Heckendorn Mfg Co
Box 88
Cedar Point KS 66843
316-274-4201

Hellige Inc
877 Stewart Ave
Garden City NY 11530
516-222-0300

Henderson Mfg Co
1085 S Third
Manchester IA 52057
319-927-2828

Hendrix & Dail Inc
PO Box 648
Greenville SC 27835-0648
919-758-4263

★Herd Seeder Co
3600 E US 35 SE
PO Box 448
Logansport IN 46947
219-753-6311

Highway Equipment Co
616 D Ave NW
Cedar Rapids IA 52405
319-363-8281

Hill's Liqui-Systems
Victoria TX 77901

Hinds Int'l Inc
700 NE Multnomah Ste 1433
Portland OR 97232
503-234-7411

Hi-Ranger Inc
N4 W22610 Bluemound Rd
Waukesha WI 53187-0177
414-547-1000

HMC/Green Machine
20710 S Alameda St
Long Beach CA 90810
213-603-9888

Hockney Underwater Weed Cutters
913 S Cogswell
Silver Lake WI 53170
414-889-4581

Hoechst Fibers Industries
PO Box 5887
Spartanburg SC 29304
800-854-7597

★Hoffco Inc
358 NW F St
Richmond IN 47374
317-966-8161

Holly Filter
31820 Via Ararat
Bonsall CA 92003
714-728-7095

Holsclaw Brothers Inc
1325 E Virginia St
Evansville IN 47711
812-423-7721

★Homelite Div Textron Inc
14401 Carowinds Blvd
Charlotte NC 28217
704-588-3200

Hopkins Agricultural Chemical Co
PO Box 7532
Madison WI 53707
608-222-0624

Hotsy Corp
21 Inverness Way E
Englewood CO 80112
303-770-5200

Howard Rotavator Co
102 Howard Ave
PO Box 7
Muscoda WI 53573
608-739-3106

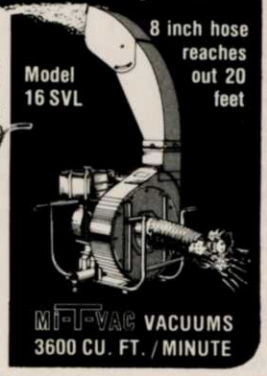
H D Hudson Mfg Co Professional Prods Div
2500 N Church St
Rockford IL 61103
815-968-2112

Hydroflo Corp
Easton Rd

Put a WHIRLWIND FORCE to work to SWEEP UP LEAVES, LITTER, etc!

TAKE-ALONG 'BIG JOB' LOADER

HAUL THIS 16 horsepower Mi-T-VAC on any truck (or trailer we make) and clean up wet or dry problems. Fills dump truck with leaves in 25 minutes!



Lo-Blo, the Air-B-Room®

HEAVY DUTY BLOWER-SWEEPER helps a small crew gather more leaves, trash, clippings in less time. For details on today's 5 to 45 horsepower models, call Area 216 **947-2344.**

ATWATER STRONG DIVISION OF GOULDS INDUSTRIES, INC. MODEL BK

BOX 68 · ATWATER, OHIO 44201

LAWN EQUIPMENT SINCE 1949

Circle No. 103 on Reader Inquiry Card

Maneuverability!

The 350SX.

- 4-Wheel-Drive and independent *front* and *rear* steering gives you control in all situations.
- Compact size allows the 350SX to go places other machines can't... even through a 36-inch yard gate.
- Clean exterior design keeps machine's components clear of tree limbs, shrubs and other obstructions.

THE PLOW PEOPLE

Ditch Witch®

Circle No. 112 on Reader Inquiry Card

Equipment Companies

continued

Plumsteadville PA 18949
215-766-7867

Hydro Rain
27671 La Paz Rd
Laguna Niguel CA 92667
714-831-6000

Hydro Terra Corp
1524 Alameda St
Pomona CA 91768
714-623-3211

Hypro Div Lear Siegler Inc
375 Fifth Ave NW
New Brighton MN 55112
612-633-9300

Industrial Leasing Corp
2300 SW Sixth Ave
Portland OR 97201
800-547-4905

Inject-O-Meter Mfg Co
820 Thornton
Clovis NM 88101
505-763-4461

Insect-O-Cutor Inc
1531 Stone Ridge Dr
Stone Mountain GA 30083
404-939-2835

Interlocking Paver Mfg Assoc (IPMA)
5 Bond St
Great Neck NY 11021
516-482-4665

Intermatic Inc
Intermatic Plaza
Spring Grove IL 60081
815-675-2321

★ International Harvester Co
401 N Michigan Ave
Chicago IL 60611
312-836-2000

International Reforestation Suppliers
2100 W Broadway
PO Box 5547
Eugene OR 97405
503-345-0597

★ Irri-Trol Mfg Co
27940 Beale Ct
Valencia CA 91355
805-257-2333

Irrometer Co
PO Box 2424
Riverside CA 92516
714-689-1701

Jackson Mfg Co
PO Box 1649
Harrisburg PA 17105
717-234-6291

★ Jacobsen Div Textron Inc
1721 Packard Ave
Racine WI 53403
414-637-6711

Jaeco Pump Co
2925 Advance Ln
Colmar Pa 18915
215-822-6000

Kawasaki Motors Corp USA Engine Div
887 Valley Park Dr
Shakopee MN 55379
612-445-6060

Kay Park Rec Corp
Hwy 218 S
Janesville IA 50647
319-987-2313

KD Manitou Inc
3120 Gholson Rd
Waco TX 76643
817-799-0232

★ F D Kees Mfg Co
700 Park
Beatrice NE 68310
402-223-2391

Kel Instruments Co
PO Box 1869
Clifton NJ 07015
201-471-3954

Kembro Inc
PO Box 305
Mequon WI 53092
414-242-2630

★ KEM Enterprises
2309 A S Tacoma Way
Tacoma WA 98409
206-473-3770

Kenyon Mfg Inc
1145 W Barkley Ave
Orange CA 92668
714-634-3422

Kershaw Mfg Co
Box 9328
Montgomery AL 36108

Kinco Mfg
170 N Pascal
St Paul MN 55104
612-644-4666

King Brothers Industries
27114 Henry Mayo Dr
Valencia CA 91355
805-257-3262

Kohler Co Engine Div
Kohler WI 53044
414-457-4441

Koppers Co
1900 Koppers Bldg
Pittsburgh PA 15219
412-227-2000

★ Kubota Tractor Corp
550 W Artesia Blvd
Compton CA 90220
213-537-2531

★ Kut-Kwick Corp
PO Box 984
Brunswick GA 31521
912-265-1630

La Font Corp
1319 Town St
Prentice WI 54556
715-428-2881

★ Lakeshore Equipment Lesco & Supply
20005 Lake Rd
Rocky River OH 44116
216-333-9250

Lambert Corp
PO Box 66
Dayton OH 45401
513-223-7295

LaMotte Chemical Prods Co
Rte E13 N
Chestertown MD 21620
301-778-3100

Landscape Forms Inc
431 Lawndale
Kalamazoo MI 49001
616-381-0396

Landscape Structures Inc
601 Seventh St S
Rte 3
Delano MN 55328
612-479-2546

Laval Corp, Claude (Lakos Separators Div)
1911 N Helm
Fresno CA 93727
209-255-1601

Lawn-Boy Product Group
McClure St
Galesburg IL 61401
309-343-0141

Lawnmaker Mfg Co
6 Johnson Ct
Bay City MI 48706
517-894-4579

Lifetime Products
Rt 78 S
PO Box 465
Kewanee IL 61443
309-853-3387

Lighting Prods Div McGraw-Edison Co
400 Busse Rd
Elk Grove Village IL 60007
312-956-8400

Limb-Lopper Div/Robinson Ind
11845 Burke St
Santa Fe Springs CA 90670
213-945-1077

Lindig Mfg Corp
1875 W County Rd C
St Paul MN 55113
612-633-3072

Little Giant Products Inc
201 W Oklahoma
Fairview OK 73737
(405) 227-3711

Little Giant Pump Co Sub Tecumseh Prods Co
3810 N Tulsa St
Oklahoma City OK 73112
405-947-2511

Locke Mfg Inc
1 Boston Ave Industrial Pk
Bridgeport CT 06610
203-333-3157

Long Mfg NC Inc
1907 N Main St
Tarboro NC 27886
919-823-4151

Lumenite Electronic Co
2331 N 17 Ave
Franklin Park IL 60131
312-455-1450

Magline Inc
503 S Mercer St
Pinconning MI 48650
517-879-2411

Marco Sprayers
206 S Main
Newkirk OK 74647
405-362-3162

Massey-Ferguson
1901 Bell Ave
Des Moines IA 50315
515-247-2011

Master Craft Industrial Equipment Corp
PO Box 106
Tifton GA 31794
912-386-0610

★Master Mfg Co
119 Main St
PO Box 694
Sioux City IA 51102
712-258-0108

Master Sprayers Inc
10756 Vernon Ave
Ontario CA 91761
714-627-7466

★Mathews Co
500 Industrial Ave
Crystal Lake IL 60014
815-459-2210

McDowell Mfg Co
PO Box 665
Du Bois PA 15801
814-371-6550

McMillen Div
4419 Ardmore Ave
Ft Wayne IN 46809
800-348-0964; 219-747-6195

Mechanical Transplanter Co
1150 S Central Ave
Box 1008B
Holland MI 49423
616-396-8738

Medallion Div Farmhand Inc
525 15th Ave S
Hopkins MN 55343
612-938-6906

Melex USA Inc
1200 Front St Ste 101
Raleigh NC 27609
919-828-7645

Melnor Industries
1 Carol Place
Moonachie NJ 07074
201-641-5000

Meredith Seed Miser
Howe ID 83244
208-767-3411

Merit Industries Inc
PO Box 8075
Cranston RI 02920
401-942-6505

Micron Corp
8582 Katy Frwy
Houston TX 77024
713-932-1405

Milwaukee Electric Tool Corp
13135 W Lisbon Rd
Brookfield WI 53005
414-781-3600

Minnesota Wanner Co
5145 Eden Ave S
Minneapolis MN 55436
612-929-1070

Miracle Recreation Equipment Co
PO Box 275
Grinnell IA 50112
515-236-7536

Mitsubishi AG Machinery Co Ltd
C/O Sumitomo Corp of America
345 Park Ave
New York NY 10154
212-935-8824

Mitts & Merrill Inc
109 McCoskry St
Saginaw MI 48601

Mobile Aerial Towers Inc
2314 Bowser Ave
Fort Wayne IN 46859
219-744-6181

Morbark Industries Inc
PO Box 1000
Winn MI 48896
517-866-2381

MoTrim Inc
240 Steubenville Ave
Cambridge OH 43725
614-439-2725

★Mott Corp
500 Shawmut Ave
PO Box 518
LaGrange IL 60525
312-354-7220

MTD Products Inc
Box 36900
Cleveland OH 44136
216-225-2600

★Mud Cat National Car Rental System
PO Box 16247
St Louis Park MN 55416
800-328-7333; MN 612-893-6400

Musco Sports-Lighting Inc
2107 Stewart Rd
PO Box 14
Muscatine IA 52761
319-263-2281

Productivity!

The 350SX.

- Vibrator speed can be varied to match soil conditions, giving you maximum fracturing force.
- Twin lift cylinders allow you to vary cover depth *during* plowing.
- Optional front-mounted hydraulic trenching accessory and a hydraulic boring unit are available so one machine can do more work.

THE PLOW PEOPLE

Ditch Witch®

Circle No. 113 on Reader Inquiry Card

Equipment Companies

continued

F E Myers Co
400 Orange St
Ashland OH 44805
419-289-1144

★National Chemsearch
2727 Chemsearch Blvd
Irving TX 75062
214-438-0389

National Hydro-Ax Inc
PO Box 568
Owatonna MN 55060
507-451-8654

National Irrigation Specialists
1025 E Katella Unit F
Anaheim CA 92805
714-634-3336

★National Mower Co
660 Raymond Ave
St Paul MN 55114
612-646-4079

L R Nelson Corp
7719 N Pioneer Ln
Peoria IL 61615
309-692-2200

Nevr-Rust Tool-Tainer Inc
3645 NW 67 St
Miami FL 33147
305-693-4680

Nordco Electric Vehicles
26701 Redlands Blvd
Redlands CA 92373

Northeast Industries Inc
300 Greenwood Ave
Midland Park NJ 07432
201-652-6202

Norton Co Safety Prods Div
2000 Plainfield Pike
Cranston RI 02920
401-943-4400

Nunes Mfg
1707 Magnola Ave
PO Box 135
Patterson CA 95363
209-892-8773

★Olathe Mfg Inc
100 Industrial Pkwy
Industrial Airport KS 66031
913-782-4396

Orbex Inc
620 S Eighth St
Minneapolis MN 55404
612-333-1208

★Orion Chemical Inc
13261 Garden Grove Blvd
Garden Grove CA 92643
714-971-2299

Par Aide Products
296 N Pascal St
St Paul MN 55104

Parco Div Blue Mountain Prod Inc
PO Box 250
New Hartford NY 13413
315-737-5736

Parker Interior Plantscape
1325 Terrill Rd
Scotch Plains NJ 07076
201-822-5552

Parker Sweeper Co
91 Bechtle Ave
Springfield OH 45504
513-323-4901

Patrician Prods Inc
468 Union Ave
Westbury NY 11590
516-333-3910

★PBI-Gordon Corp
1217 W 12 St
Kansas City MO 64101
816-421-4070

Peerless Pump
1200 Sycamore St
Montebello CA 90640
213-726-1232

Pitman Div
Third & Duck Rd
PO Box 120
Grandview MO 64030
816-763-6000

Playtime Equipment Corp
Box J
Mars PA 16046
412-625-1541

Playworld Systems
315 Cherry St
New Berlin PA 17855
717-966-1015

Poligon Div W H Porter Inc
PO Box 1112-B
Holland MI 49423
616-399-1963

Poulan/Weed Eater
5020 Flournoy-Lucas Rd
Shreveport LA 71109
318-687-0100

★Power Lawnmower Parts Inc
PO Box 60860
Rochester NY 14606
716-458-0800

Power Spray Technology Inc
900 Calcon Hook Rd
Sharon Hill PA 19079
215-461-6331

Precision Products Inc
2415 S Grand Ave E
Springfield IL 62708
217-528-1311

Prentek Corp
Prentice WI 54556
715-428-2000

Presto Products Inc
670 N Perkins St
PO Box 2399
Appleton WI 54913
414-739-9471

Howard Price Turf Equipment
18155 Edison
Chesterfield MO 63017
314-532-7000

Princeton Mfg Co
955 W Walnut St
PO Box 246
Canal Winchester OH 43110
614-837-9096

Professional Turf Specialties
400 Northtown Rd
Normal IL 61761
309-454-2469

Progressive Electronics Inc
432 S Extension
Mesa AZ 85202
602-834-4308

Promark Products Inc
306 Ninth St
Industry CA 91744

★Rain Bird Sprinkler Mfg Corp
145 N Grand Ave
Glendora CA 91740
213-963-9311

Raindrip Inc
14675 Titus St
Panorama City CA 91402
213-963-3040

Rain-O-Mat Sprinklers Inc
12414 E Whittier Blvd
PO Box 151
Whittier CA 90608-0151
213-693-2721

★Ransomes Inc
One Bob-Cat Ln
Johnson Creek WI 53038
414-699-2000

Raverty's Sod Blades
PO Box 7606
St Paul MN 55119
612-774-2155

Reach-All Mfg
436 Calvary Rd
Duluth MN 55803
218-728-5138

Reading Body Works Inc
Hancock Blvd & Gerry St
PO Box 14
Reading PA 19603
215-775-3301

Reinco Inc
520 North Ave
Plainfield NJ 07060
201-755-0921

Rhino Prods Inc
1000 Singleton
PO Box 222117
Dallas TX 75222
214-651-0733

Rhino Sales Corp
620 Andrews Ave

Kewanee IL 61443
309-853-4461

Richdel Inc
1851 Oregon St
Carson City NV 89701
702-882-6786

★ Richway Industries
525 Main St
Box 508
Janesville IA 50647
800-553-2404

Rivlex Industries Inc
301 E Stevens Ave
Santa Ana CA 92707
714-540-8814

Robark Inc
7309 Lake Dr
Lino Lakes MN 55014
612-784-0657

Rokor Inc
310 Herring Ave
Wilson NC 27893
919-237-2108

Rolatape Corp
4221 Redwood Ave
Los Angeles CA 90066
213-822-2057

Root-Lowell Corp
1000 Foreman Rd
Lowell MI 49331
616-897-9212

★ Roseman Mower Corp
2300 Chestnut Ave
Glenview IL 60025
312-729-2300

Rotocast Plastic Products Inc
3645 NW 67 St
Miami FL 33147
305-693-4680

★ Royal Coach/Buckner
4381 N Brawley Ave
Fresno CA 93711
209-275-0500

Royer Foundry & Machine Co
Kingston PA 18704
717-287-9624

Rugg Mfg Co
105 Newton St
Box 507
Greenfield MA 01301
413-773-5471

★ Ryan /OMC Lincoln
PO Box 82409
Lincoln NE 68501
402-435-7208

Safe-T-Lawn Inc
5350 NW 165 St
Hialeah FL 33014
305-625-7000

TWO WAYS TO CUT COSTS FOR SEEDING & MULCHING

T80 HYDROSEEDER

• One-man operation saves labor costs • 800 gallon capacity • Seeds up to three acres per tank load (up to ⅓ acre with fibre mulch) • Discharges up to 90 feet • Paddle agitation controlled by hydraulic motor • Will handle all types of materials • Low profile trailer or skid mounting • High pressure pump for spraying herbicide (optional) • Versatile for large or small jobs • This unit can do it all •

BP50 BLOWER

• Economical power take-off eliminates need for separate engine • 21-inch dynamically balanced fan produces discharge velocity of 135 MPH • Delivers up to 4 tons per hour • Easily attaches to tractor • Rugged three-point construction • Rear-mounted towing plate for mulch transporter • Adjustable feed tray with bale stop • Optional 8.5 GPM adhesive system •

OTHER ECONOMICAL HIGH-PERFORMANCE FINN EQUIPMENT

B50 Blower — 5 tons per hour . . . **B250 Blower** up to 25 tons per hour/90′ reach . . . **T150 Hydroseeder** (1500 gal.) 4 acres per load/200′ reach . . . **T250** (2500 gal.) 8 acres per load . . . **T300** (3000 gal.) 10 acres per load/200′ reach. There's a **FINN** tank or blower for every job.

Call or write for information on our *complete* product line and your local dealer's location.

P.O. BOX 8068 • 2525 DUCK CREEK RD.
CINCINNATI, OHIO 45208 U.S.A.
PLANTS: CINCINNATI, OHIO • KNOXVILLE, TENNESSEE
PHONE (513) 871-2529 TOLL FREE (800) 543-7166

FINN CORPORATION

Circle No. 120 on Reader Inquiry Card

Stability! The 350SX.

- Rigid frame, 4-wheel-steer and oscillating front axle provide stability on uneven terrain and on side-hills.
- A hydraulic swing cylinder keeps the vibrator and blade from swinging to the low side when coming out of the ground, preventing sudden shifts in weight.
- Standard high-flotation tires grip the ground and minimize turf damage.

THE PLOW PEOPLE

Ditch Witch®

Circle No. 114 on Reader Inquiry Card

Equipment Companies

continued

Safety Test & Equipment Co
PO Box 400
Shelby NC 28150
704-482-7346

Samson
99 High St
Boston MA 02110
617-426-6550

Sarlo Power Mowers Inc
2315 Anderson Ave
Ft Myers FL 33901
813-332-1955

Don Savage Co
PO Box 375
Honeoye NY 14471
716-229-5121

Schutt's Equipment Co
450 Larchlea
Birmingham MI 48012
313-642-6555

★O M Scott & Sons Co Proturf Div
Marysville OH 43040
513-644-0011

Seaman Parsons Co
13500 W Carmen Ave
Menomonee Falls WI 53225
414-781-8900

Sea Ranch
Rte 2 Box 604
Sheridan AR 72150
501-942-2515

★Sensation Corp
3601 N 16th
Omaha NE 68110
402-345-3884

★Sensation Div Gilson Bros Co
PO Box 536
Plymouth WI 53075
414-893-1011

Seymour Mfg Co
500 N Broadway
Seymour IN 47274
812-522-5676

Shaver Mfg Co
5727 NE 16
PO Box 3087
Des Moines IA 50316
515-266-7550

Sidewinder International Inc
6 Johnson Ct
Bay City MI 48706
517-894-4570

Simplicity (Allis-Chalmers Co)
500 N Spring St
Port Washington WI 53074
414-284-5535

Sioux Steam Cleaner Corp
Sioux Plaza
Beresford SD 57004
605-763-2776

Skil Corp
4801 W Peterson Ave
Chicago IL 60646
312-286-7330

D B Smith & Co
414 Main St
Utica NY 13501
315-735-5223

★Smithco Inc
11 West Ave
Wayne PA 19087
215-688-4009

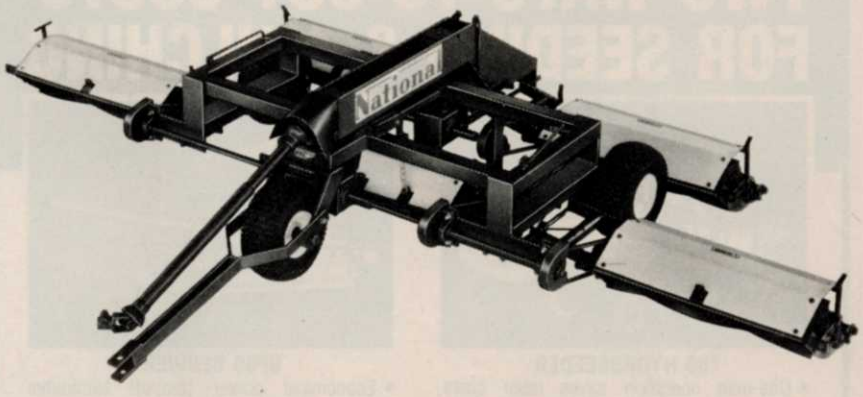
Smith Precision Products
1299 Lawrence Dr
Newbury Park CA 91320
805-498-6616

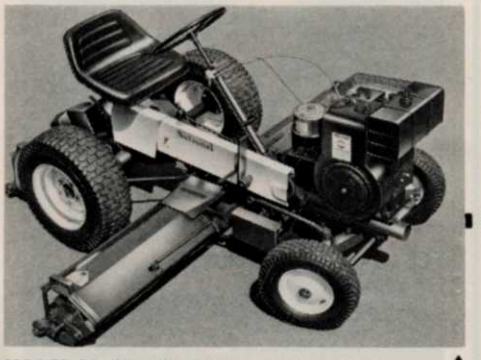
Seymour Smith & Son Inc
900 Main St
Oakville CT 06779
203-274-2558

Snapper Power Equipment
535 Macon Rd
McDonough GA 30253
404-957-9141

The National Favorites

National, Made in U.S.A., reel mowers...preferred by turf management professionals for their dependability, low initial cost, simple, functional design, low fuel consumption and *greater uptime!*





MODEL 84: New Steering assembly for more positive response, shorter turning radius and minimum maintenance. 84" cutting width.

MODEL 68: Standard B&S, I/C, heavy duty engine. Three powered reels provide 68" cut.

POWER QUINT II: PTO Driven 5-Gang. Highly maneuverable. Cutting units are interchangeable with, and the same as those made for Model 84 for over 30 years. Cuts an 11½-foot swath.

★★★
NATIONAL
MOWER
SINCE 1919

NATIONAL MOWER COMPANY

660 Raymond Ave.
St. Paul, MN 55114
612/646-4079

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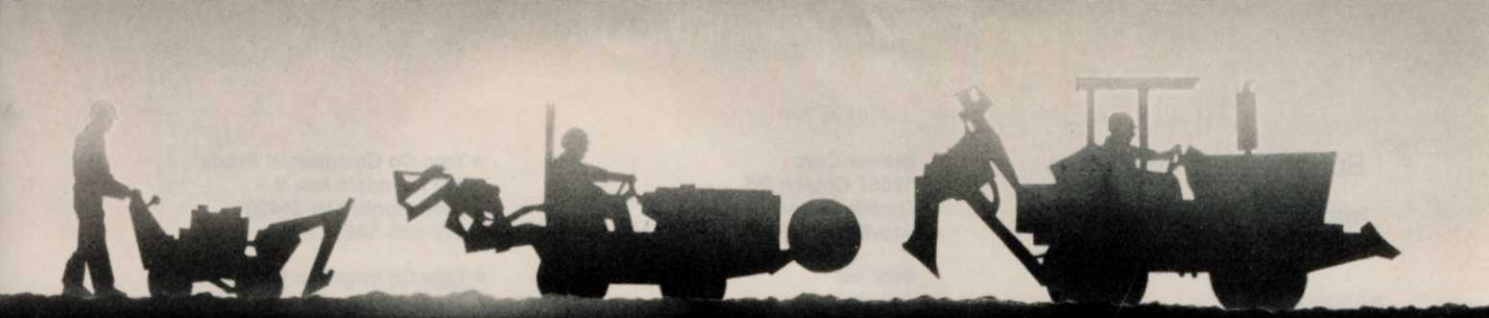

3 good reasons for buying Ditch Witch vibratory plow equipment.

Selection.

It stands to reason that the people who pioneered and developed vibratory plowing should lead the way in vibratory plowing. From 25-to-100-HP-class machines, you'll find Ditch Witch offers the most complete selection of vibratory plows in the industry.

With Ditch Witch plows, you can install telephone and power cable, water and natural gas lines, television cable, irrigation systems and more. All without digging trench, without backfilling.

Service.

A measure of a machine's value is its dependability. And a key to dependability is service.

With Ditch Witch equipment, you get service that will keep your plow running right. And on the job. We have more specialist dealer locations than anyone else in the industry; dealers with a complete parts inventory. Staffed with trained mechanics who specialize in Ditch Witch equipment.

Experience.

We pride ourselves on being underground construction specialists. That's why at Ditch Witch dealer locations, you'll find people with a knowledge of area soil conditions. And they know the plowing techniques that are best suited for *your* area.

Ditch Witch dealers help you match the best plow and plow blade for your job to make sure you get the best production possible.

Selection, service and experience: you get more of each with Ditch Witch vibratory plows. So call us The Plow People. Better yet, call us *your* Plow People.

Write today for information. The Charles Machine Works, Inc., P. O. Box 66, Perry, Oklahoma 73077. 405/336-4402.

Ditch Witch. Don't settle for less!

THE PLOW PEOPLE

Ditch Witch®

Circle No. 212 on Reader Inquiry Card

Equipment Companies

continued

★Snowco
4350 McKinley St
Omaha NE 68112
402-453-2200

Soilmoisture Equipment Corp
PO Box 30025
Santa Barbara CA 93105
805-964-3525

Solarcell Land & Bldg Inc
412 113th St
Arlington TX 76011
817-640-1488

★Solo Inc
5100 Chestnut Ave
PO Box 308
Newport News VA 23605
804-245-4228

Sorensen Sprayers Inc
Airport Rd
Box 344
Worthington MN 56187
507-376-6230

Sperry New Holland
500 Diller Ave
New Holland PA 17557
717-354-1121

Spraying Devices Inc
PO Box 3107
Visalia CA 93278

★Spraying Systems Co
North Ave at Schmale Rd
Wheaton IL 60188
312-665-5000

Spring City Electric Mfg Co
Hall & Main Sts
PO Drawer A
Spring City PA 19475
215-948-4000

Spyder Sales Inc
12838 Westheimer Rd
Houston TX 77077
800-392-2459

A G Stafford
PO Box 8877
Canton OH 44711
216-458-2855

Sta-Green Plant Food Co
PO Box 540
Sylacauga AL 35150
205-245-5282

★Standard Golf Co
220 E Fourth St
Cedar Falls IA 50613
319-266-2638

★Stanley Hydraulic Tools
3810 SE Naef Rd
Milwaukie OR 97222
503-659-5660

Steiner Corp
12657 Church Rd
Orrville OH 44667
216-683-0055

Stihl Inc
536 Viking Dr
Virginia Beach VA 23452
804-486-8444

Strong Ent Inc
4240 SW 72 Ave
Miami FL 33155
305-264-5525

Strong Mfg Co
PO Box 8068
Pine Bluff AR 71611
501-535-4753

Submatic Irrigation Systems
PO Box 246
Lubbock TX 79408
806-747-9000

Sudbury Laboratory Inc
6 October Hill Rd
Holliston MA 01746
800-343-9911

Swan Hose
8929 Columbus Price
Worthington OH 43085
614-548-6511

Sweepster
2810 SW Baker Rd
Dexter MI 48130
313-426-3961

Swenson Spreader Co
PO Box 127
Lindenwood IL 61020
815-393-4456

Taylor-Dunn Mfg Co
2114 W Ball Rd
Anaheim CA 92804
714-956-4040

Tecumseh Products Co Engine Div
900 North St
Grafton WI 53024
414-377-2700

Teledyne Total Power
3409 Democrat Rd
Memphis TN 38118
901-365-3600

Tennant Co
701 N Lilac Dr
Minneapolis MN 55440
612-540-1200

Terrain King Corp
PO Drawer 549
Sequin TX 78155

Thompson Mfg Co
4832 Chino Ave
PO Box 1500
Chino CA 91710
714-591-4851

Tiger Corp
4315 N Cliff Ave
Sioux Falls SD 57104
605-336-7900

★Toro Co Commercial Prods
8111 Lyndale Ave S
Minneapolis MN 55420
612-888-8801

★Toro Co Irrigation Div
5825 Jasmine St
Riverside CA 92502
714-688-9221

Trac N Combo
268 Lake Ave
Metuchen NJ 08840
201-494-3131

Tradewinds Inc
PO Box 1191
Tacoma WA 98401
206-272-4887

Trans-Tree Corp
5100 Eden Ave
Edina MN 55436
612-927-4450

Travelrain Sprinkler Co
239 N Robertson Blvd
Beverly Hills CA 90211
213-276-3213

★Trebor Corp
4047-A Jonesboro Rd
Forest Park GA 30050
404-366-0957

Trees Inc
Rt 5 Box 251
Carthage MO 64836
417-358-8174

Tri-Con Inc
27331 Tungsten Rd
Cleveland OH 44132
216-261-3400

Trojan Battery Co
9440 Ann St
Santa Fe Springs CA 90670

Trojan Playground Equipment Mfg Co
11-2nd Ave NE
St Cloud MN 56301
612-251-3080

★Tuflex Mfg Co
1406 SW Eighth St
Pompano Beach FL 33060
In FL 305-785-6402; 800-327-9005

Turfco Mfg Inc
3456 Washington Ave N
Minneapolis MN 55412
612-588-0741

Turfgrass Products Corp
2210 NE 124 St
North Miami FL 33181
305-893-6449

Turfibre Products
2210 NE 124 St
North Miami FL 33181
305-893-6449

★Turf Vac Corp
PO Box 4339
Long Beach CA 90804
213-426-9376

Sensation's Walk-Behind Mowers

The Number One Choice

For unsurpassed commercial mower performance, day after day and year after year, depend on the Sensation L-Series Walk-Behind mowers. From the powerful 21 and 19 inch models — to the 14 inch

specialty trimmer — they're all made to start fast and mow even through wet grass.

Blades have a patented air lift design that forces clipping out evenly to prevent clogging. Rust proof mag-aluminum cutting decks are built to last a lifetime. And a specially engineered crankshaft protector acts as an extra support to practically eliminate crankshaft bending.

The Sensation Walk-Behind mowers are also covered by a full two year limited warranty.

Learn more about the quality advantages of the entire Sensation line of Walk-Behind, Self-Propelled, Intermediate and Hi Wheeler mowers. Contact your Sensation distributor or call the Sensation sales department.

LIMITED COMMERCIAL 2 YEAR WARRANTY

Sensation

Professionals Count On Us

Division of
Gilson Brothers Company
P.O. Box 536
Plymouth, WI 53073 USA
414/893-1011

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Circle No. 149 on Reader Inquiry Card

Equipment Companies

continued

Turner International (Eng) Ltd
6480 Chupp Rd Unit B1
Lithonia GA 30058
404-482-7661

★ Twin City Engine Rebuilders Inc
1754 University
St Paul MN 55104
612-646-4588

Union Fork & Hoe Co
500 Dublin Ave
Columbus OH 43216
614-228-1791

Universal-Gerwin Div
460 Main St
Saranac MI 48881
616-642-9413

★ Vandermolen Corp
119 Dorsa Ave
Livingston NJ 07039
201-992-8506

Vaughan's Seed Co
5300 Katrine Ave
Downers Grove IL 60515
312-969-6300

Vemco Corp of America
1331 23rd St
Racine WI 53403
414-634-6050

Vermeer Mfg Co
Box 200
Pella IA 50219
515-628-3141

Vicon Farm Machinery Inc
PO Box 6313
Chesapeake VA 23323
804-485-1600

Jim Walls Co
12820 Hillcrest Rd Ste 119
Dallas TX 75230
214-239-8577

★ Weather-matic
3301 W Kingsley Rd
Garland TX 75041
214-278-6131

Weldco (WA) Inc
PO Box 8
Enumclaus, WA 98022
206-825-3581

★ Wells Cargo Inc
PO Box 728-473
Elkhart IN 46515
219-264-9661

Western Cascade Inc
1150 N Red Gum St
Anaheim CA 92803
714-630-4640

Western Products
7777 N 73 St
Box 23045
Milwaukee WI 53129
414-354-2310

Western Wood Structures Inc
20675 SW 105
Tualatin OR 97062
503-692-6900

Westheffer Co
PO Box 363
Lawrence KS 66044
913-843-1633

Westinghouse Electric Corp Lamp Div
Bloomfield NJ 07003

★ Wheel Horse Products Inc
515 W Ireland Rd
South Bend IN 46680
219-291-3112

Wheel Spray Corp
Box 97
Delafield WI 53018
414-646-8640

D J Wilson Co
2707 Churchill Dr
Huntsville AL 35801
205-881-6391

Hermann A Wirth
PO Box 4305
Princeton FL 33032

Wood/Chuck Chipper Corp
Stoney Point Rd
PO Drawer 400
Shelby NC 28150
704-482-4356

★ Woods Div Hesston Corp
Hwy 2 South
Oregon IL 61108
815-732-2141

Woodstream Corp
Front & Locust Sts
Lititz PA 17543
717-626-2125

W-W Grinder Inc
2957 N Market
Box 4029
Wichita KS 67204
316-838-4229

Yamaha Motor Corp US
PO Box 6620
Buena Park CA 90622

Yanmar Tractor (USA) Inc
476 Country Club Dr
Bensenville IL 60106
312-860-5370

Yard Vac Prods Inc
2889 N Larkin Ave
Fresno CA 93727
209-291-6691

Yazoo Mfg Co
3607 Livingston Rd
Jackson MS 39216
601-366-6421

York Rakes Div York Modern Corp
PO Box 488
Unadilla NY 13849
607-369-7111

Young Industries
1033 Wright Ave
Mountain View CA 94043
415-968-8486

3. Chemicals

This section is broken down by chemical product with companies providing that chemical listed below. Products common name (in parentheses) and brand names are listed on the line following the company name.

Adjuvant/Carrier

Aquatrols Corp
  Aqua-Gro "L"
BASF Wyandotte Corp
  Citowett Plus
Chevron Chemical Co
  Ortho X-77 Spreader
Drexel Chemical Co
  (Alkylaryl Polyethoxyethanol, N-Butanol)
  Drexel Surf-Ac 820; (Petroleum Oils)
  Drexel Peptoil
Grass Growers Inc
  Herbex
Hopkins Agricultural Chemical Co
Kalo Agricultural Chemicals
  Bid-88
Nalco Chemical Co
  Nalcotrol, Nalcotrol II, STA-PUT
PBI-Gordon Corp
  Adjumec
Rigo Co
  Rigo Spreader/Sticker
Rohm & Haas Co
  Triton
Stull Chemical Co
  (Deposition & Retension Agent) Bivert
  Super Savol Concentrate
United Agri-Products

Algaecide

Applied Biochemists Inc
  (Copper Ethanolamine Complex)
  Cutrine-Plus

WE REACH THE PEOPLE YOU NEED TO REACH!

Place a classified ad in any of these HARCOURT BRACE JOVANOVICH PUBLICATIONS - and you know your ad dollar is wisely spent.

HBJ PUBLICATIONS does a better job of reaching those who count *(your potential customers)* than any other business publisher.

Magazine	Circulation
American Automatic Merchandiser	11,694
Beverage Industry	22,548
Body Fashions/Intimate Apparel	10,226
Candy Industry	3,800
Candy Marketer Quarterly	10,224
Dairy Field	23,694
Dental Laboratory Review	17,292
Dental Management	102,105
Drug & Cosmetic Industry	10,618
Flooring	22,042
Food & Drug Packaging	66,359
Food Management	51,498
Hearing Instruments	17,708
Home & Auto	22,519

Magazine	Circulation
Hotel & Motel Management	39,793
Housewares	12,765
Lawn Care Industry	12,662
LP/Gas	15,098
Neurology	12,917
Paperboard Packaging	12,594
Paper Sales	12,752
Pest Control	14,722
Professional Remodeling	38,788
Quick Frozen Foods	21,135
Roofing/Siding/Insulation	18,316
Snack Food	9,112
Toys Hobbies & Crafts	13,697
Weeds Trees & Turf	46,082

Don't forget that classified advertising works just as effectively in locating employees as it does if you are looking for a position, have a line, machinery or a business to sell, are seeking representatives or wish to buy a specific item. Let it go to work for you!

HBJ PUBLICATIONS - COUNT ON US TO REACH THOSE WHO COUNT!

HBJ HARCOURT BRACE JOVANOVICH PUBLICATIONS
One East First Street
Duluth, Minnesota 55802

Call Dawn Anderson at 218-727-8511

C

Chemicals

continued

Aquashade Inc
Ciba-Geigy Corp
(Simazine) Aquazine
Clean-Flo Laboratories Inc
(Buffered Alum) Clean-Flo Lake Cleanser
Faesy & Besthoff Inc
(Copper Sulphate, Triangle Brand)
Great Lakes Biochemical Co
(Chelated Copper) Algimycin
Hoechst Fibers Ind
(Geotextile) Trevira Spunbound
Lakeshore Equipment Lesco Products Div
(Copper Triethano Lamine Complex) Lescocide-Plus
National Chemsearch
(Quat) D-Algae
Orion Chemical Inc
Rhom & Haas Co
Hyamine
United Agri-Products

Antitranspirant

Agro Chem Inc
Aquatrols Corp of America
Stoma-Seal
W A Cleary Chemical Corp
(Liquid Latex Polymer) Clearspray
C B Dolge
Encap Products Co
Wilt-Pruf
Miliken Chemicals
Blazon
National Chemsearch
(Proprietary Blend) Weather Shield
PBI-Gordon Corp
Exhault 410
Wilt-Pruf Products Inc
Wilt-Pruf

Colorant

Agro Chem Inc
Aquashade Inc
W A Cleary Chemical Corp
(Blended Pigment Dispersion) Grass Greenzit, Tree Greenzit, Super Greenzit, Spruce Up
Lakeshore Equipment & Supply
Lesco Green
Mallinckrodt Inc
Turf Colorant, Auragreen, Vitalon

Compatibility Agent

Drexel Chemical Co
(Polyhydroxy Aliphatic Compounds) Drexel Mix
W A Cleary Chemical Corp
Water Acidifier & Chelation Agent
Hopkins Agricultural Chemical Co
Unite
Kalo Agricultural Chemicals
Compex
Miller Chemical & Fertilizer Corp
Rigo Co
Rigo
Sandoz Inc
Stull Chemical Co
(Bivert) Bivert
United Agri-Products

Defoamer

Agro Chem Inc
Applied Biochemists Inc
(Silicone-based) Spa-Trine No-Foam
W A Cleary Chemical Corp
(Dimethylsiloxane Suspension) Cleary's
Faesy & Besthoff Inc
Defoamer & Unfoamer
Hopkins Agricultural Chemical Co
Kalo Agricultural Chemicals
Lakeshore Equipment & Supply
(Dimenthylpolysiloxane) Lesco Defoamer
Miller Chemical & Fertilizer Corp
Montco Products Corp
(Silicone) Zap!
Nalco Chemical Co
Nalco 2151
Rigo Co
Rigo D-Fome
Stull Chemical Co
(Deposition & Retention Agent) Bivert
United Agri-Products

Drift Retardent

Agro Chem Inc
W A Cleary Chemical Corp
(Blend of non-ionic Surfactants & Magnesium Silicates) Drift Proof
Chevron Chemical Co
Orthothrol
Stull Chemical Co
(Deposition, Retention Agent) Bivert
United Agri-Products

Fertilizer, Tree

Adco Works
Eeesy Grow
Agro Chem Inc
American Pelletizing Corp
(Pelletized Calcium Sulfate, Gypsum) Reveille
BFC Chemicals Inc
(Urea Formaldehyde) Nitroform Powder Blue
Chevron Chemical Co
Nutrient Spray D
C-I-L Inc
Sulfur Coated Urea
W A Cleary Chemical Corp
(Liquid Ureaform Suspension) FLUF; (Blended Liquid Ureaform Suspension) 16-2-5
Creative Sales Inc
Medicap ZN, Medicap FE, Medicap MN, Medicap MD
Cumberland International Corp
(Zinc) Liquid Zinc Chelate
Davey Tree Expert Co
Davey Arbor-Green
Estech Inc (IL)
Gro-Tone, Vigoro
Faesy & Besthoff Inc
F&B
Great Salt Lake Minerals & Chemicals Corp
GSL Sulfate of Potash
Lakeshore Equipment & Supply
Lesco Liquid
Lebanon Chemical Corp
Lebanon Tree Food
Leffingwell Chemical Co
(Chelated Iron) Nutra Phos, Sorba Spray, Vitatone
Lofts Seed Inc
(Sulfur coated Urea) Lofts Professional Lawn Food
J J Mauget Co
Zinc Stemix, Stemix, Iron-zinc Stemix
MCI Agsystems
(2, 4, 6 Triamino, 1, 3, 5 Triazine + urea, 60-0-0, 55-0-0, 50-0-0) Super 60
National Chemsearch
(Indol 3-Butyric acid) Promonite; (liquid fertilizer-15-10-5) Turf-King; (liquid fertilizer-12-4-12) Turf Sea Search: (15-0-0 Liquid Nitrogen fertilizer with Iron) Green-O-Gen; (timed-released fertilizer-20-10-5) SRF-27
Orion Chemical Inc
Plant Marvel Laboratories Inc
(25-15-10) Tree & Shrub Special; Plant Marvel
Sierra Chemical Co
Agriform
United Agri-Products
USS Agri-Chemicals Div US Steel
USS Vertagreen

Fertilizer, Turf

J & L Adikes Inc
GRO-WELL
Agro Chem Inc

We could not buy it so we made it.

This Fertilizer Spreader will do the work of at least 3 men with walking spreaders. Fan is operated by hydraulic system. Covers as little as 5 ft. as much as 30 ft. Turning radius about 4 ft. *Dealers wanted.*

Write: **Oliver Godwin**
3530 South Pine, 5C
Ocala, Fla. 32671

or call
904-351-1918

Circle No. 123 on Reader Inquiry Card

LAWN CARE PROFESSIONALS...MARK YOUR CALENDARS!

THE PLACE: INDIANAPOLIS THE DATE: NOV. 8-10 THE EVENT: THE PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA 1983 CONFERENCE & TRADE SHOW

THE PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA CORDIALLY INVITES YOU TO THE 4TH ANNUAL CONFERENCE AND TRADE SHOW, NOVEMBER 8 TO 10, INDIANA CONVENTION · TRADE CENTER, INDIANAPOLIS, INDIANA.

The Lawn Care industry will gather in Indianapolis this November for three exciting days of growing, learning and enjoying at the 4th Annual PLCAA Conference and Trade Show.

CONFERENCE PROGRAM: Meet with leading experts and colleagues from across the country. Talk shop, share problems and solutions, and exchange ideas. The 1983 conference program includes some of the top pros in the turf industry. You'll get practical, no-nonsense advice on the hot topics: • What's new in agrinomics • Better business practices • Government regulations that affect your business • Effective management.

TRADE SHOW: Preview supplier products, equipment and services in the spectacular Indiana Convention · Trade Center. Major industry manufacturers and suppliers will be on hand to demonstrate their product and answer your questions.

KEYNOTE SPEAKER: The 1983 PLCAA Keynote Speaker will be the dynamic Jack Van Fossen, President and Chief Executive of Chemlawn Corporation. Meet the driving force behind Chemlawn, one of the remarkable success stories in the turf industry.

EARLY BIRD REGISTRATION: Make plans to arrive early Monday, November 7th, and take advantage of the Early Bird Registration and Reception Theme Party. Register, meet old friends, (and make some new ones), relax and be fresh and ready to go when the show opens Tuesday morning.

Symbol of Good Practice
PLCAA
PROFESSIONAL LAWN CARE ASSOCIATION OF AMERICA

YES! I'm interested in attending PLCAA's 4th Annual Conference and Trade Show. Send me more information on:

☐ REGISTRATION ☐ EXHIBITING ☐ MEMBERSHIP

NAME _____

COMPANY _____

ADDRESS _____

CITY, STATE, ZIP _____

Mail to: **Professional Lawn Care Association of America**
1225 Johnson Ferry Road, NE • Suite B220 • Marietta, Georgia 30067

Circle No. 163 on Reader Inquiry Card

Chemicals

continued

American Pelletizing Corp
(Pelletized Calcium Sulfact, Gypsum) Reveille
The Andersons
Tee Time
BFC Chemicals Inc
(Ureaformaldahyde) Nitroform Blue Chip
Chevron Chemical Co
C-I-L Inc
Sulfur Coated Urea
W A Cleary Chemical Corp
(Liquid Ureaform Suspension) FLUF; (Blended Liquid Ureaform Suspension) 16-2-4; (Blended Liquid Ureaform Suspension) 10-1-4; (Solublized Ureaform Liquid) FAN; (Blended Solubilized Ureaform Liquid) 16-2-5
Cumberland International Corp
(Zinc) Liquid Zinc Chelate
Emerald Isle Ltd
Estech Inc (FL)
Par Ex
Estech Inc (IL)
(with IBDU) Vigoro, Par-Ex
Faesy & Besthoff Inc
F&B
Great Salt Lake Minerals & Chemicals Corp
GSL Sulfate of Potash
Jonathan Green & Sons Inc
Landscaper 600
Lakeshore Equipment Lesco Products Div
Lesco Professional Turf
Lebanon Chemical Corp
Country Club, Greens Keeper, Green Gold
Leffingwell Chemical Co
(Chelated Iron) Nutra Phos, Sorba Spray, Vitatone
Liqui*Lawn Corp
(20-3-3 with Trace Elements) Liqui*Lawn Spray'On Lawn Food
Loft-Kellogg Seed Inc
MCI Agsystems
(2, 4, 6 Triamino, 1, 3, 5 Triamine + urea, 60-0-0, 55-0-0, 50-0-0) Super 60
Miller Chemical & Fertilizer Corp
Milwaukee Metropolitan Sewerage District
(Activated Sewage Sludge) Milorganite
National Chemsearch
(12-4-4 liquid fertilizer with Sulfur and Iron) Green Badge; (15-0-0) liquid Nitrogen fertilizer with Iron) Green-O-Gen; (liquid High Nitrogen fertilizer) Nutrate; (time-released fertilizer-20-10-5) SRF-27; (liquid fertilizer-12-4-12) Turf King; (liquid fertilizer-12-4-12) Turf Search
Orion Chemical Inc
Pennwalt Corp
Plant Marvel Laboratories Inc
Plant Marvel, Bent Special, Lawn Marvel, Bermuda Special
Pro-Lawn Products Inc
Regal Chemical Co
Regalstar
Rhone-Poulenc Inc Agrochemical Div
(Sulfur, Copper, Iron, Manganese, Zinc) Chipco Microgreen Liquid
O M Scott & Sons Co Proturf
Sierra Chemical Co
Osmocote
Sta-Green Plant Food Co
Sta-Green
Stanford Seed Co
(26-4-9 + Iron & SCU) Old English (8-20-10 + Iron & SCU) Old English
Sudbury Laboratory Inc
United Agri-Products
USS Agri-Chemicals Div US Steel
USS Vertagreen
Vaughan's Seed Co

Fungicide, Tree

J & L Adikes Inc
GRO-WELL FERBAM, GRO-WELL ZINEB
Agro Chem Inc
Bonide Chemical Co
(Sulphur, Captan, Benomyl, Chlorothalonil, Karathane, Copper, Folpet) Bonide
Chevron Chemical Co
Orthocide 50 Wettable
Ciba-Geigy Corp
(Metalaxyl) Subdue
Cumberland International Corp
(Maneb) Maneb ZL4

KEES 36"
HEAVY-DUTY
Commercial
MOWER
Model 36110H

CHECK THESE PERFORMANCE FEATURES:

■ Powerful 11 h.p. Briggs I/C or Honda synchro-balanced engine ■ Fingertip clutch, brake and power turning control levers on each handle ■ Sleek deck design and drum wheel brakes for positive, close quarter mowing ■ Unique V-flanged front deflectors help prevent damage to yard decorations, monuments, etc. ■ Baffled design for clean and safe grass discharge. OPTIONS: Riding sulky and large 3-bu. capacity grass catcher.

For more information, write F.D. Kees, P.O. Box 1024, Beatrice, Nebraska 68310 Phone (402) 223-2391.

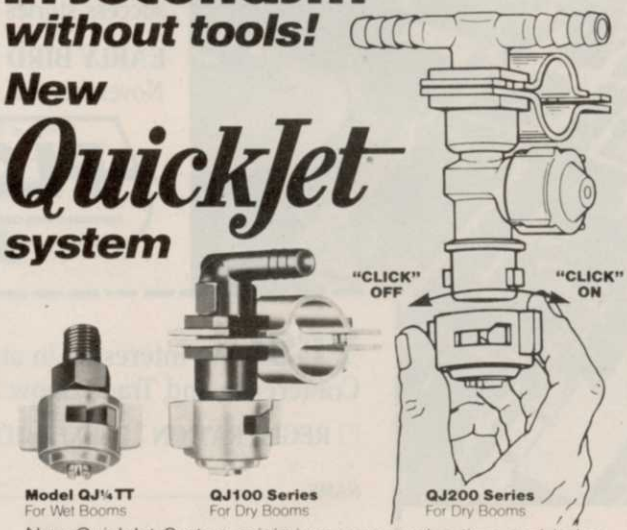
Since 1874

F. D. KEES MFG. CO. Beatrice, Nebr. 68310

Circle No. 130 on Reader Inquiry Card

Change spray tips clean strainers in seconds... without tools!

New QuickJet system



Model QJ¼TT For Wet Booms
QJ100 Series For Dry Booms
QJ200 Series For Dry Booms

New QuickJet System minimizes your service time and helps assure accurate delivery. The self-aligning quick "on/off" cap can be used with all interchangeable spray tips. The caps are available in 8 colors for color-coding different tip sizes.

QUICKJETS SAVE TIME AND MONEY.

Send for QuickJet bulletin and data sheets.

Spraying Systems Co.

Wheaton, IL 60188 Telephone 312/665-5000

Circle No. 151 on Reader Inquiry Card

When your job depends on stopping gypsy moths and other pests, depend on ORTHENE.

ORTHENE® Tree & Ornamental Spray is the professional way to kill gypsy moth larvae... plus a wide range of other insects. It kills on contact, then keeps killing with an effective residual action.

Other insects on ORTHENE's list? It also works on aphids, bagworms, birch leafminer, tent caterpillar, Douglas fir tussock moth larvae, webworms, scales, California oakworm, spring and fall cankerworms, Nantucket pine tip moth larvae and adult root weevil.

See your ORTHO Distributor or send in the coupon for more information—make your job easier, with ORTHENE.

AVOID ACCIDENTS: For safety, read the entire label including precautionary statements. Use all chemicals only as directed.

FOR PROFESSIONAL USE
ORTHO PRO

Mail to:
R. G. Gras,
Chevron Chemical Company,
575 Market Street,
San Francisco,
CA 94105

Please send me more information on ORTHENE.

Name

Company

Street Address

City/State/Zip

ORTHENE®

YOU CAN DEPEND ON IT.

Chemical Companies

continued

Drexel Chemical Co
(Maneb) Drexel Manzi; (Dicofol) Drexel Dicofol EC
Faesy & Besthoff Inc
Mallinckrodt Inc
(Zn, Mn, Thiophanate Methyl) Zyban
J J Mauget Co
(DEBC) Fungisol; (Plantvax) Fungisol PV
Mobay Chemical Corp Agri Chem Div
MSD/AGVET Div Merck & Co
(Arbotect) Arbotect 20 S
Orion Chemical Inc
Rigo Co
Rohm & Haas Co
Dikar
SDS Biotech
Daconil 2787 Flowable, Daconil 2787 W-75
United Agri-Products
Vineland Chemical Co

Fungicide, Turf

Agro Chem Inc
Bonide Chemical Co
Cadmium Chloride, Chlorothalonil, Copper, Sulphur, Dyrene, Thiram, Benomyl, Zineb, Folpet) Bonide
Chevron Chemical Co
Orthocide 50 W
Ciba-Geigy Corp
(Metalaxyl) Subdue
W A Cleary Chemical Corp
(Ethyl Thiophanate) 3336 (F, WP); (Thiram) Thiram (F, WP); (Combo Thiram & Ethyl Thiophanate) Bromosan (F, WP); (Cadium Chloride Solution) Caddy; (Phenylmercuricacetate Solution) PMAS 10%; (Cadium Chloride & Thiram) Cadtrete (WP, G)
Cumberland International Corp
(Maneb) Maneb ZL4
C B Dolge
E I du Pont de Nemours & Co
Tersan LSR, Tersan 1991, Tersan SP
Estech Inc (IL)
(Zineb) Vigoro
Faesy & Besthoff Inc
Lakeshore Equipment & Supply
(Maneb, Thiram, PCNB) Lesco 4, Lesco Thiram 75, Lesco PCNB + Fertilizer
Lebanon Chemical Corp
Greenskeeper, Country Club, Green Gold
Lofts Seed Inc
(Dyrene) Lofts Fungicide
Mallinckrodt Inc
(Mercuric Chloride, Mercurous Chloride) Calo-Clor, Calo-Gran; (Cadmium Succinate) Cadminate; (ZN, Mn EBCD, Thiophanate Methyl) Duosan; (Thiophanate Methyl) Fungo 50; (Cadmium Sebecate, Potassium, Chromate, Thiram) Kromad; (Ethazol) Koban 30, Koban 1.3G; (Thiram) Thiramad
Mobay Chemical Corp Agri Chem Div
(Triadimefon) Bayleton
MSD/AGVET Div Merck & Co
Mertect 340 F
Olin Corp
Terraclor, Terrazole 35W
Orion Chemical Inc
PBI Gordon Corp
Rhone-Poulenc Inc Agrochemical Div
Rohm & Haas Co
Fore
O M Scott & Sons Proturf
SDS Corp
Daconil 2787 Flowable, Daconil 2787 W-75
Tuco Ag Chemicals
(Cycloheximide, Propamcarb) Acti Dione, Banol
United Agri-Products

Growth Regulator

Drexel Chemical Co
(Maleic Hydrazide) Drexel Retard
Maag Inc
Atrinal
3M/Agricultural Products
(Mefluidide) Embark
MSD/AGVET Div Merck & Co
Gibrel
National Chemsearch
(Melfluidide) Gro-Tard II
Orion Chemical Inc
Pennwalt Corp
United Agri-Products
US Borax
Maintain

Cut the Cost of Soil Management...

No other product can give you the results and still cut soil management costs like PENE-TURF Soil Treatment. PENE-TURF costs only about $8 an acre to apply...you can treat **twice** the acreage at less than **half** the cost of similar products!

And what results! Golf course superintendents and professional turf managers across the nation are finding that PENE-TURF improves aeration...helps establish better rooting...eliminates wet **and** dry spots...helps curb erosion...and so much more.

Find out for yourself...write or call today for FREE information about PENE-TURF...the **best** solution for soil management.

Dealerships available in some areas.
Write or call today!

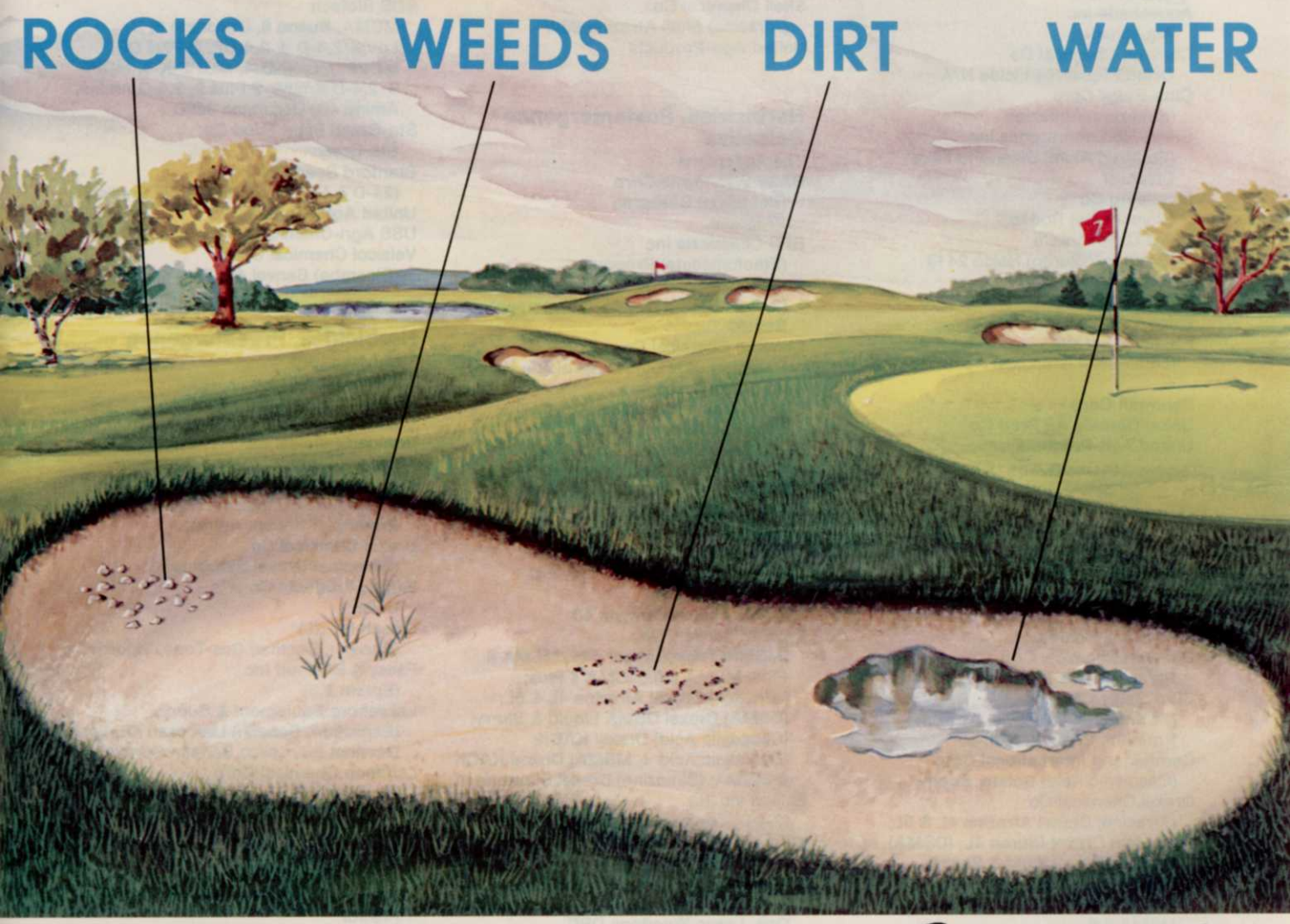
...use PENE-TURF.

FOUR STAR AGRICULTURAL SERVICES, INC.

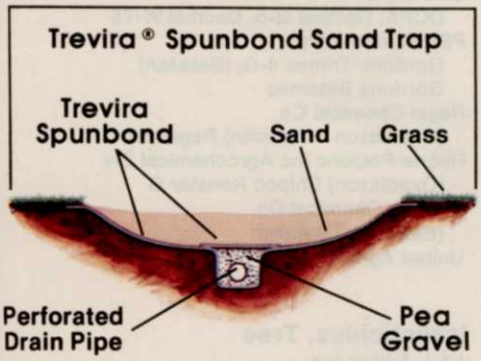
110½ East Wabash St. • Bluffton, IN 46714 • (219) 824-5384

Circle No. 122 on Reader Inquiry Card

A BLANKET SOLUTION FOR YOUR BUNKER PROBLEMS



TREVIRA® SPUNBOND from *Warren's*®



Trevira® Spunbond is a registered trademark of Hoechst AG. Warren's is an authorized distributor of Trevira® Spunbond.

Circle No. 161 on Reader Inquiry Card

This revolutionary new geotextile fabric can be your "Security Blanket" against today's ever increasing course maintenance costs! A simple installation of Trevira® Spunbond as shown here will effectively eliminate such bunker nightmares as dirt...rocks...and weeds while allowing complete water drainage ...no more wading pools in your sand traps! And, Trevira® Spunbond will stand the test of time because it's impervious to soil chemicals. When properly installed, mechanical sand rakes and even those deadly deep digging sand wedges will not affect it! You'll also find Trevira® Spunbond the ideal and economical solution for such applications as reinforcing cart paths, erosion control, drainage, greens liners, and much more.

Available in easy-to-use rolls, Trevira® Spunbond is produced in weights ranging from 4.5 to 16 oz/yd². For applications literature on our "Security Blanket" and dealer locations, call or write Warren's Seed-Special Products Division.

You'll sleep better for it!

Warren's®

SEED-SPECIAL PRODUCTS DIVISION
P.O. Box 459, Suisun City, CA 94585, (707) 422-5100
Corporate Office: 7502 S. Main St., Crystal Lake, IL 60014, (815) 455-5100

Chemicals

continued

Herbicides, Aquatic

Agro Chem Inc
Applied Biochemists Inc
(Diquat, 2, 4-D granular) Weedtrine-D, Weedtrine II
Aquashade Inc
Aquashade
Chevron Chemical Co
Ortho Diquat Herbicide H/A
Ciba-Geigy Corp
(Simazine) Aquazine
Clean-Flo Laboratories Inc
(Buffered Alum) Clean-Flo Lake Cleanser
Monsanto Co
(Glyphosate) Rodeo
Nalco Chemical Co
(Bromacil/Diuron) Nalco 2413
National Chemsearch
(Diquat) Watrol
Orion Chemical Inc
PBI Gordon Corp
(Dichlobenil Granules) Acme Norosac 10-G
Pennwalt Corp
Union Carbide Ag Prod Co
United Agri-Products

Herbicides, Nonselective

J & L Adikes Inc
GRO-WELL NO-GRO
Bonide Chemical Co
(Ammate, Cacodylic Acid, Sodium Arsenite) Bonide
Chevron Chemical Co
Paraquat Plus Diquat Herbicide H/A
Ciba-Geigy Corp
(Promotone, Simazine, Atrazine) Pramitol, Princep, AAtrex
Cumberland International Corp
(Cacodylic Acid) Bolate, Bophy
Drexel Chemical Co
(Atrazine) Drexel Atrazine 4L & 5L; (Diuron) Drexel Diuron 4L; (DSMA) Drexel DSMA Liquid & Slurry; (Simazine) Drexel Simazine 4L; (MSMA) Drexel MSMA 4 Plus, MSMA 6 Plus, MSMA 6.6
Elanco Products Co
Spike
Hopkins Agricultural Chemical Co
Revenge, Rout & Dozer, Urox
Lakeshore Equipment & Supply
(Sodium Metaborate Tetrahyde) Lescobor
Lebanon Chemical Corp
Monsanto Co
(Glyphosate) Roundup
National Chemsearch
(Sodium Chlorate, Sodium Metaborate Anhydrous) Cantex; (Bromacil, Pentachlorophenol) Fenocil; (3 (p-chlorophenyl)-1, 1-Dimethylurea Trichloroacetate, 2, 4-Dichlorophenoxyacetic acid) NS-610
Occidental Chemical Co
Monobor Chlorate, Ureabor
Orion Chemical Inc
PBI Gordon Corp
Gordon Vegemec; (Dichlobenil Granules) Acme Norosac 10-G
Rhone-Poulenc Inc Agrochemical Div
(Dimethylamine salt, 2, 4-dichlorophenoxyacetic acid) Chipco Turf Herbicide D; (Diethanolamine salt, 2 (2-methyl) 4-chlorophenoxy propionic acid) Chipco Turf Herbicide MCPP
Rigo Co
(Amino Triazole) Rigo Amitrol T
Shell Chemical Co
(Atrazine) Shell Atrazine 80W
United Agri-Products

Herbicides, Postemergence Selective

The Andersons
BASF Wyandotte Corp
(Bentazon) Basagran
Prograss
BFC Chemicals Inc
(Ethofumesate) Prograss
Bonide Chemical Co
(2, 4-D, Banvel D, 245-T, Tupersan) Bonide
Chevron Chemical Co
Paraquat Plus Diquat Herbicide H/A
Ciba-Geigy Corp
(Promotone, Simazine, Atrazine) Pramitol, Princep, AAtrex
W A Cleary Chemical Corp
(Mecoprop) MCPP; (Mecoprop + 2,4-D) MCCP 2,4-D; (DSMA)Methar-30; (Blended Amine Salts of Methylarsonate) Super Methar; (Blended Amine Salts of Methylarsonate) AMA + 2, 4-D
Dow Chemical USA
(2,4-D Amine) Formula 40
Drexel Chemical Co
(MSMA) Drexel Ansar 529, MSMA 6 Plus, MSMA 6.6, MSMA 4 Plus; (Atrazine) Drexel Atrazine 4L & 5L; (DSMA) Drexel DSMA Liquid & Slurry; (Cacodylic Acid) Drexel KACK; (Cacodylic Acid + MSMA) Drexel KACK & MSMA; (Simazine) Drexel Simazine 4L
Estech Inc (IL)
(2,4-D, Trimec) Gro-Tone, Vigoro
Kalo Agricultural Chemicals
(2,4-D) Demise
Lakeshore Equipment & Supply
Lescopar, Lesco Eight-One, Lesco Ten-One, Lesco Weedone DPC
Lesco A-4D
Lebanon Chemical Corp
Liqui*Lawn Corp
Spray'On Broadleaf
Lofts Seed Inc
(MCCP + 2, 4-D) Dandelion & Broadleaf Weed Killer
Mallinckrodt Inc
(Dicamba, 2,4-D, MCRP) Trexsan
Mobay Chemical Corp Agri Chem Div
(Metribuzin) Sencor
Monsanto Co
(Glyphosate) Roundup
National Chemsearch
(DAMA) CGK-79; (MCPP) Chem-Weed; (2,4-D, MCPP) Apollo 445
Orion Chemical Inc
PBI Gordon Corp
(Dichlobenil Granules) Gordons Dyclomec 4-G; Gordons Trimec
Rhone-Poulenc Inc Agrochemical Div
(Sodium salt of asulam) Asulox; (Bromoxynil) Buctril; (Diethanolamine salt of 2 (2 methyl-4-chlorophenoxy) Propionic acid Diethanolamine salt of 4, 2-dichlorophenoxy-acetic acid
Rigo Co
2,4-D plus Dicamba) Super D Weedone
Rohm & Haas Co
Blazer, Stam, Stampede
O M Scott & Sons Proturf
SDS Biotech
MSMA, Bueno 6, Daconate 6, LoVol/2,4-D + 2,4-DP, D Plus DP, MCPP, MCPP-D-4, MCPP-K-4, MCPP + 2,4-D Amine, 2 Plus 2, 2,4-D Amine, Amine 4D, Dacamine 360D
Sta-Green Plant Food Co
Sta-Green
Stanford Seed Co
(24-D & MCPP + 18-3-5) Old English
United Agri-Products
USS Agri-Chemicals Div US Steel
Velsicol Chemical Corp
(Dicamba) Banvel 4S, Banvel +24-D

Herbicides, Preemergence

The Andersons
Tee Time
BFC Chemicals Inc
(Ethofumesate) Prograss
Bonide Chemical Co
Eptam, Dacthal, Tupersan) Bonide
Ciba-Geigy Corp
(Promotone, Simazine, Atrazine) Pramitol, Princep, Aatrex
Drexel Chemical Co
(Simazine) Drexel Simazine 4L
Elanco Products Co
Balan
Estech Inc (IL)
(Benefin, Dacthal) Gro-Tone, Vigoro
Faesy & Besthoff Inc
(Eptam 2.3)
Lakeshore Equipment & Supply
(Bensulide, Benefin) Lescosan 4E, Lesco Devrinol 5G, Lesco Benefin Sprayable
Lebanon Chemical Corp
Lofts Seed Inc
Balan on Tupersan) Crabgrass Killer
Mallinckrodt Inc
(Bensulide) Presan
National Chemsearch
(Dimethyi Tetrachloroterephthalate) Pretrol
Orion Chemical Inc
O M Scott & Sons
Proturf
SDS Biotech
DCPA, Dacthal G-5, Dacthal W-75
PBI Gordon Corp
Gordons Trimec 4-G; (Betasan) Gordons Betamec
Regal Chemical Co
(Oxadiazon + Benefin) Regalstar
Rhone-Poulenc Inc Agrochemical Div
(Oxadiazon) Chipco Ronstar G
Stauffer Chemical Co
(Bensulide) Betasan
United Agri-Products

Insecticides, Tree

J & L Adikes Inc
GRO-WELL

American Cyanamid Co
Malathion
BFC Chemicals Inc
(Bendiocarb) Turcam
Bonide Chemical Co
(Dipel, Metasystox R, Cygon, Lindane, Kelthane, Rotenone, Pyrethrins, Disyston, Malathion, Methoxychlor, Sevin, Diazinon) Bonide
Chevron Chemical Co
(Dibrom 8) Orthene Tree & Ornamental Spray
Ciba-Geigy Corp
(Diazinon) Diazinon
Conrel
Creative Sales Inc
(Orthene) Acecap 97
Drexel Chemical Co
(Carbaryl) Drexel Carbaryl 4L & 2L; (Methoxychlor) Drexel Methoxychlor 4L; (Diazinon) Drexel D-264-4E; (Endosulfan) Drexel Endosulfan 2EC
Lebanon Chemical Corp
Mallinckrodt Inc
Bendiocarb, Dycarb, (Diazinon & Methoxyclor) Dymet; (Bendiocarb) Dymet
J J Mauget Co
(Metasystox R) Inject-A-Cide; (Technical Bidrin) Inject-A-Cide "B"
National Chemsearch
(Dursban/DDVP) Dichloron; (Disyston) Stem-AX
Orion Chemical Inc
Prentiss Drug & Chemical Co
(Diazinon) Prentox
Rhone-Poulenc Inc Agrochemical Div
(Phosalone) Zolone EC
Rigo Co
(Diazinon) Rigo Diazinon A-C 500; (Malathion) Rigo Malathion SE
Rohm & Haas Co
Karathane, Kelthane
Shell Chemical Co
(Monocrotophos) Azodrin 5WM; (Methomyl) Nudrin 1.8S; (Methomyl) Nudrin 90WSP; (Fenvalerate) Pydrin 2.4EC; (Fenbutatin-Oxide) Vendex 50WP; (Fenbutatin-Oxide) Vendex 50WSB
Stauffer Chemical Co
Imidan
Union Carbide Ag Prod Co
Sevin
United Agri-Products
Zoecon Corp Ag Chem Div

Insecticides, Turf

American Cyanamid Co
The Andersons
Tee Time
BFC Chemicals Inc
(Bendiocarb) Turcam
Bonide Chemical Co
(Dipel, Methoxychlor, Mesurol, Pyrethrin, Diazinon, Sevin, Dursban, Aspon, Oftanol, Malathion) Bonide
Ciba-Geigy Corp
(Diazinon) Diazinon
Conrel
C B Dolge
Dow Chemical USA
(Chlorpyrifos) Dursban
Drexel Chemical Co
(Carbaryl) Drexel Carbaryl 4L & 2L; (Diazinon) Drexel D264-4E
Estech Inc (IL)
(Diazinon, Dursban) Vigro
Hooker Chemical
Hopkins Agricultural Chemical Co
(Diazinon, Malathion)
Lakeshore Equipment & Supply
Lesco Oftancol & Fertilizer, Lesco Dursban, Lesco Diazinon
Lebanon Chemical Corp
Lofts Seed Inc
(Diazinon) Insect Killer
Mallinckrodt Inc
Diazinon & Methoxyclor, Dymet
Mobay Chemical Corp Agri Chem Div
(Isofenphos) Oftanol
National Chemsearch
(Dursban/DDVP) Dichloron
Orion Chemical Inc
PBI Gordon Corp
(Sevin) Gordons Carbamec
Prentiss Drug & Chemical Co
(Diazinon) Prentox
Rigo Co
(Diazinon) Rigo; (Dursban) Rigo Lawn & Ornamental
Rohm & Haas Co
Kelthane
O M Scott & Sons Co Proturf
Stanford Seed Co
(Diazinon + 18-3-5) Old English

Circle No. 150 on Reader Inquiry Card

Chemicals

continued

Stauffer Chemical Co
Aspen
Tuco Ag Chemicals
(Trichlorfon) Proxol
Union Carbide Ag Prod Co
(Carbaryl) Sevin
United Agri-Products
USS Agri-Chemicals Div US Steel

Miticides

Mobay Chemical Corp Agri Chem Div
Morestan
United Agri-Products

Mulches, Erosion Control

American Excelsior Co
(Excelsior Blanket) Curlex
Anderson's Erosion Control Inc
Grass Mulch
Cal-Fiber Co
Cal-Fiber
Conwed Corp
Grass Fiber Inc
(Cellulose Fiber) Grass Mulch
Grass Growers Inc
Terra Tack
Gulf States Paper Corp
Hoechst Fibers Ind
Jacklin Seed Co
National Bark Sales
(Western Red Cedar Bark) Montaho
Reclamare Co
J-tac
S P R A-Mulch
Superior Fiber Products Co
Turfiber
Thermoguard
(Hydromulch) Tur Fiber
Weyerhaeuser
(Wood Mulching Fibers) Silva Fiber

Nematocides

Bonide Chemical Co
(Vapam) Bonide Soil Fumigant
Estech Inc (IL)
(Vapam) Vigoro, Gro-Tone
Mobay Chemical Corp Agri Chem Div
(Fenamiphos) Nemacur
Rhone-Poulenc Inc Agrochemical Div
(Ethoprop) Mocap
Stauffer Chemical Co
Vapam

Repellents, Animal

Hopkins Agricultural Chemical Co
(Thiram) Thiram 42-S
Leffingwell Chemical Co
Hinder
Orion Chemical Inc

Repellents, Bird

Bonide Chemical Co
Crow-Tex
Conwed Corp
National Bird Control
Roost-No-More
Orion Chemical Inc
Stanford Seed Co
Borderland Black, Crow Chex, Stanleys

Root Killer

Applied Biochemists Inc
(Copper Sulfate) Rootrine
Faesy & Besthoff Inc
(Copper Sulphate)

Soil Conditioner

Agro Chem Inc
American Pelletizing Corp
(Pelletized Limestone & Dolomite)
Reveille
Aquatrols Corp of America
Aqua-Gro
Cal-Sul, Granulime, Reville
W A Cleary Chemical Corp
(Humate Concentrate) Turf Gro
C B Dolge
Emerald Isle Ltd
Estech Inc (IL)
(Perlite) Vigoro
Four Star Agricultural Services Inc
(Ammonium Laureth Sulfate) Pene-Turf
Grass Fiber Inc
(Cellulose Fiber) Garden Mulch
Grass Growers Inc
(Seaweed Extract) Terra Plus
ICI
International Reforestation Suppliers Inc
Lakeshore Equipment & Supply
Lesco Wet/Lescozyme
National Bark Sales
(Bark) Top 'N Turf
Super Moisturizer
Terra Sorb
Michigan Peat Co
(Hort Sphagnum, Sphagnum Peat Moss)
Garden Magic
Nalco Chemical Co
Nalco 2190
National Chemsearch
(water soluble Iron) Ferate; (natural organic extract) Nature-Aid; (an ionic blend of penetrants) Turf-Tonic
Oil-Dri Corp of America
Terra Green
United Agri-Products
United States Gypsum Co
(Gypsum) Sof'N-Soil
USS Agri-Chemicals Div US Steel

Soil Fumigants

Bonide Chemical Co
(Vapam) Bonide Soil Fumigant
Estech Inc (IL)
(Vapam) Vigoro
Faesy & Besthoff Inc
(Vapam)
Hopkins Agricultural Chemical Co
Mylone 50D
Orion Chemical Inc
Shell Chemical Co
Stauffer Chemical Co
Vapam
United Agri-Products

Sticker Extender

BASF Wyandotte Corp
Citowett Plus
Bonide Chemical Co
Bonide Spreader Sticker
Chevron Chemical Co
Chevron Spray Sticker
W A Cleary Chemical Corp
(Polymer & Non-ionic Surfactant) Wet 'N Hold
Cumberland International Corp
(Adjuvant) Ag-Chem Activator
Encap Products Co
Spray-Stay
Hopkins Agricultural Chemical Co
Plyac
Kalo Agricultural Chemicals
BioFilm
Lakeshore Equipment & Supply
Lesco Spreader Sticker
PBI-Gordon Corp
Exalt 800
Rigo Co
Rigo Spreader w/defoamer; Spray-Ad CVF
Rohm & Haas Co
Triton
Stull Chemical Co
(Deposition & Retension Agent) Bivert
Superior Fiber Products Co
Fiber-Lock
Wilt-Pruf Products Inc
Spray-Stay

Tree Dressings

J & L Adikes Inc
GRO-WELL Tree Paint
Bartlett Mfg Co
Bonide Chemical Co
(Asphalt) Bonide
Samuel Cabot Inc
(Healing Paint) Cabot's Tree
Coopers Creek Chemical Corp
C-4
Lakeshore Equipment & Supply
Lesco Pruning Spray

Wetting Agents

Agro Chem Inc
Aquatrols Corp of America
Aqua-Gro 'L', Aqua-Gro 'S'
BASF Wyandotte Corp
Citowett Plus
Chevron Chemical Co
Chevron Spreader
W A Cleary Chemical Corp
(Blended Nionic Surfactant) All Wet; (Blend of Ethoxylated Fatty Acids & Ethers)
Drexel Chemical Co
Drexel Wetz
E I du Pont de Nemours & Co
Surfactant WK
Finn Corp
Hydro-Gel
Hopkins Agricultural Chemical Co
Neptune
Kalo Agricultural Chemicals
Hydrowet
Lakeshore Equipment & Supply
Lesco Wet
Montco Products Corp
(Surfactans, non-ionic) Surf-Side
Mallinckrodt Inc
Aquagro

National Chemsearch
(an ionic blend of penetrants) Turf-Tonic; (non-ionic blend of penetrants) Groundsmaster SWA
Orion Chemical Inc
PBI-Gordon Corp
Gordons Aquazorb
Rigo Co
Rigoette Plus
Rohm & Haas Co
Triton
United Agri-Products

4. Chemical Companies

J & L Adikes Inc
182-12 92rd Ave
Jamaica NY 11423
212-739-4400

Agricultural Service Corp
PO Box 101
Harrisburg OR 97446
503-995-6754

Agro Chem Inc
11150 Addison
Franklin Park IL 60131
312-455-6900

Agro-K Corp
5750 Main St NE
Minneaolis MN 55432
612-571-6555

American Cyanamid Co
Berdan Ave
Wayne NJ 07470
201-831-2000

American Excelsior Co
850 Ave H East
PO Box 5067
Arlington TX 76011
817-640-1555

American Pelletizing Corp
7200 Hickman Rd
Des Moines IA 50322
515-278-5900

★ The Andersons
PO Box 119
Maumee OH 43537
419-893-5050

Anderson's Erosion Control Inc
PO Box 205
Junction City OR 97448
503-998-6812

Applied Biochemists Inc
5300 W County Line Rd
Mequon WI 53092
414-242-5870

★ Aquashade Inc
PO Box 198
Eldred NY 12732
914-557-8077

Aquatrols Corp of America
1432 Union Ave
Pennsauken NJ 08110
609-665-1130

Balcom Special Products
PO Box 1287
Greeley CO 80632
303-356-4400

Bartlett Mfg Co
3003 E Grand Blvd
Detroit MI 48202
313-873-7300

BASF Wyandotte Corp
100 Cherry Hill Rd
Parsippany NJ 07054
201-263-0200

★ BFC Chemicals Inc
4311 Lancaster Pike

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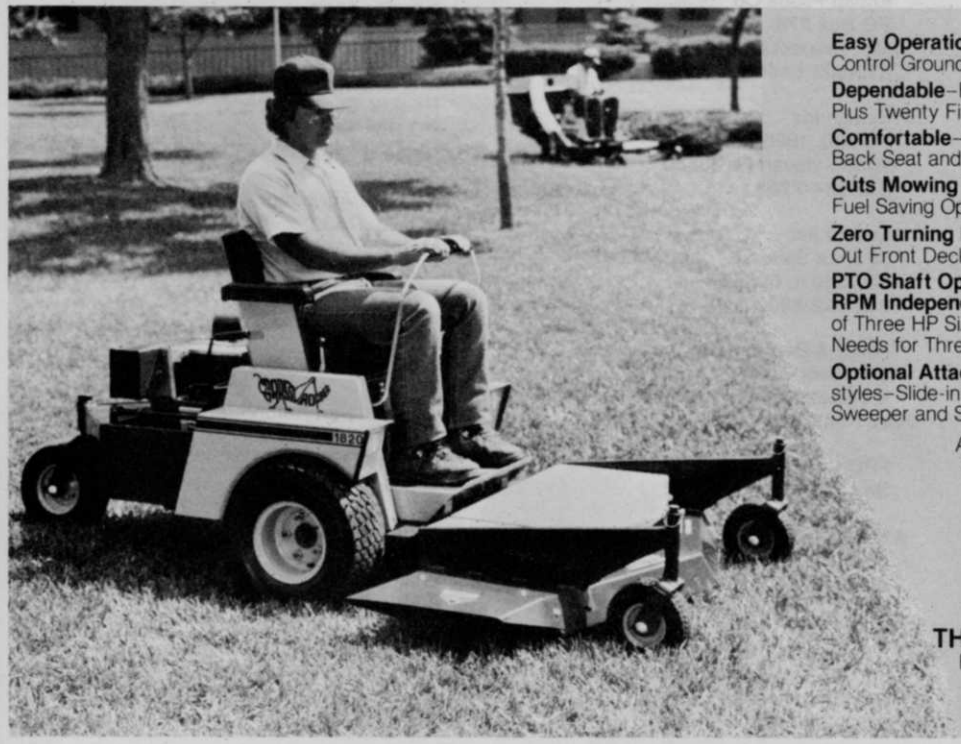

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Comfortable–Natural Sitting Position with Cushioned Back Seat and Padded Arm Rests.

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Chemical Companies

continued

Wilmington DE 19805
302-995-1177

Bonide Chemical Co
2 Wurz Ave
Yorkville NY 13495
315-736-8231

Samuel Cabot Inc
One Union St
Boston MA 02108
617-723-7740

Cal-Fiber Co
625 S Anderson St
Los Angeles CA 90023
213-268-0191

★Chevron Chemical Co
575 Market St
San Francisco CA 94105-2856

★Ciba-Geigy Corp
PO Box 18300
Greensboro NC 27419
919-292-7100

★C-I-L Inc
171 Queens Ave
PO Box 5201
London ON N6A 4L6
Canada
519-672-9220

Clean-Flo Laboratories Inc
4342 Shady Oak Rd
Hopkins MN 55343
800-328-6656; 612-935-2137

★W A Cleary Chemical Corp
1049 Somerset St
PO Box 10
Somerset NJ 08873
201-247-8000

Conrel
110 A Street
Needham Heights MA 02194
617-449-3970

★Conwed Corp
PO Box 43237
St Paul MN 55164
612-221-1100

Coopers Creek Chemical Corp
River Road
West Conshohocken PA 19428
215-828-0375

C P Chemical Co
39 W Moreland Ave
White Plains NY 10606
914-428-2517

Creative Sales Inc
222 N Park Ave
Box 501
Fremont NE 68025
402-727-4800

Crystal Chemical Co
1525 N Post Oak Rd
Houston TX 77055
713-682-1221

Cumberland International Corp
1523 N Post Oak Rd
Houston TX 77055
713-682-1221

★Davey Tree Experts Co
117 S Water St
Kent OH 44240
216-673-2027

Diamond Shamrock Ag Chem Div (See SDS Biotech)

C B Dolge
11 Ferry Lane
Westport CT 06880
203-227-9591

★Dow Chemical USA
PO Box 1706
Midland MI 48640
517-636-1105

Drexel Chemical Co
2487 Pennsylvania St
Memphis TN 38109
901-774-4370

E I du Pont de Nemours & Co
1007 Market St
Wilmington DE 19898
302-774-7547

★Elanco Prods Co
1740 S Alabama St
Indianapolis IN 46285
317-261-3638

Emerald Isle Ltd
2153 Newport Rd
Ann Arbor MI 48103
313-662-2727

Encap Prods Co
PO Box 278
Mt Prospect IL 60056
312-593-6464

★Estech Inc
PO Box 1996
Winter Haven FL 33880
813-294-7793

Estech Inc
30 N La Salle St
Chicago IL 60602
312-322-8302

Faesy & Besthoff Inc
143 River Road
]Edgewater NJ 07020
201-945-6200

FBC Chemicals Inc
See BFC Chemicals Inc

★Finn Corp
2525 Duck Creek Rd
Cincinnati OH 45208
513-871-2529; 800-542-7166

★Four Star Agricultural Services Inc
110 1/2 E Wabash St
Bluffton IN 45714
219-824-5384

Fuerst Brothers Inc
PO Box 271
Rhinebeck NY 12572
914-876-3575

Grass Fiber Inc
520 E Second St
Junction City OR 97448
503-998-6812

Grass Growers Inc
424 Cottage Pl
Plainfield NJ 07060
201-755-0923

Great Lakes Biochemical Co
6120 W Douglas Ave
Milwaukee WI 53218
414-464-1200

★Great Salt Lake Mineral & Chemicals Corp
PO Box 1190
Ogden UT 84402
801-731-3100

Jonathan Green & Sons Inc Seedsman
Squankum-Yellowbrook Rd
Farmingdale NJ 07727
201-938-7007

Gulf States Paper Corp
PO Box 3199
Tuscaloosa AL 35404
205-553-6200

Hawkeye Chemical Co
Box 899
Clinton IA 52732
319-243-5800

Hendrix & Dail Inc
PO Box 648
Greenville NC 27834-0648
919-758-4263

Hoechst Fibers Ind
PO Box 5887
Spartanburg SC 29304
800-845-7597

Hooker Chemical
PO Box 344
Niagara Falls NY 14302

Hopkins Agricultural Chemical Co
PO Box 7532
Madison WI 53707
608-222-0624

ICI
PO Box 751
Wilmington DE 19897

International Reforestation Suppliers Inc
2100 W Broadway
Eugene OR 97405
503-345-0597

International Spike
PO Box 1750
Lexington KY 40593
800-354-9360

★Kalo Agricultural Chemicals
4550 W 109 St Ste 222
Overland Park KS 66211-1383
913-649-5525

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It also mixes well with bluegrass or fine fescue, tolerates a wide range of soil types from heavy clay to sandy and retains its deep green color when used as a winter overseeding grass for dormant native Southern grass.

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Telephone (503) 369-2251 TWX 510/590-0765

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Chemical Companies

continued

★ Lakeshore Equipment & Supply Lesco Prods Div
20005 Lake Rd
Rocky River OH 44116
216-333-9250

★ Lebanon Chemical Corp
PO Box 180
Lebanon PA 17042
800-233-0628

Leffingwell Chemical Co
111 S Berry
Brea CA 92621
714-871-1991

Liqui*Lawn Corp
4548 Emery Industrial Pkwy
Warrensville Hts OH 44128
216-831-3610

★ Lofts Seed Inc
Chimney Rock Rd
Bound Brook NJ 08805
201-356-8700

★ Maag Inc
PO Box 2408
Tuscaloosa AL 35403
205-758-1186

★ Mallinckrodt Inc
PO Box 5439
St Louis MO 63147
314-982-5044

J J Mauget Co
PO Box 3422
Burbank CA 91504
213-849-2309

MCI Agsystems
PO Box 748
Donaldsonville LA 70346
504-473-3121

Michigan Peat Co
PO Box 66388
Houston TX 77266
800-231-6211; In TX 713-522-0711

Miller Chemical & Fertilizer Corp
PO Box 333
Hanover PA 17331
717-632-8921

Milliken Chemicals
PO Box 817
Inman SC 29349
803-472-9041

★ Milwaukee Metropolitan Sewerage District
735 N Water St
Milwaukee WI 53202
414-225-2222

★ 3M/Agricultural Prods
Bldg 223-1N-05 3M Center
St Paul MN 55144
612-736-0569

★ Mobay Chemical Corp/Specialty Products Group
PO Box 4913
Kansas City MO 64120
816-242-2000

★ Monsanto Co
800 N Lindbergh Blvd
St Louis MO 63167
314-694-1000

Montco/Surf-side
Box 404
Ambler PA 19002
215-628-3144

MSD/AGVET Div Merck & Co
PO Box 2000
Rahway NJ 07065
201-574-6463

Nalco Chemical Co
2901 Butterfield Rd
Oak Brook IL 60521
312-887-7500

National Bark Sales
1365 N Orchard St
Boise ID 83707
208-375-0656

National Bird Control
PO Box 1
Skokie IL 60076
312-675-2368

★ National Chemsearch
2727 Chemsearch Blvd
Irving TX 75062
214-438-0389

Nursery Specialty Products
PO Box 4280
Greenwich CT 06830

Occidental Chemical Co
PO Box 198
Lathrop CA 95330
209-858-2511

Oil-Dri Corp of America
522 N Michigan Ave
Chicago IL 60611
800-621-7191; In IL 312-321-1515

Olin Corp
Box 991
Little Rock AR 72203
501-378-3727

★ Orion Chemical Inc
13261 Garden Grove Blvd
Garden Grove CA 92643
714-971-2299

★ PBI-Gordon Corp
1217 W 12 St
Kansas City KS 64101
816-421-4070

★ Pennwalt Corp
Three Pkwy
Philadelphia PA 19102
215-587-7000

Plant Food Chemical Co
RD #1 Box 173
Cranbury NJ 08512
609-448-0935

Plant Marvel Laboratories Inc
371 E 16 St
Chicago Hts IL 60411
312-757-7500

★ Prentiss Drug & Chemical Co
363 Seventh Ave
New York NY 10001
212-736-6766

Professional Turf Specialties
400 Northtown Rd
Normal IL 61761
309-454-2467

★ Pro-Lawn Products Inc
PO Box 4908
Syracuse NY 13221

★ Reclamare Co
20727 Seventh Ave S
Seattle WA 98148
206-824-2385

Regal Chemical Co
PO Box 641
Alpharetta GA 30201
404-475-4837

★ Rhone-Poulenc Inc Co Agrochemical Div
Black Horse Lane
Box 125
Monmouth Junction NJ 08852
201-297-0100

RIGO Co
PO Box 89
Buckner KY 40010
502-222-1456

Rohm & Haas Co
Independence Mall West
Philadelphia PA 19105
215-592-3000

Sandoz Inc
480 Camino Del Rio
San Diego CA 92108

★ O M Scott & Sons Co Proturf Div
Marysville OH 43040
513-644-0011

★ SDS Biotech
7528 Auburn Rd
Painesville OH 44077
216-357-3000

Shell Chemical Co
One Shell Plaza
900 Louisiana St
Houston TX 77002
713-241-6161

Sierra Chemical Co
1001 Yosemite Dr
Milpitas CA 95035-5494
408-263-8080

S P R A-Mulch
PO Box 189
Mattoon IL 61938
217-235-0561

Sta-Green Plant Food Co
PO Box 540
Sylacauga AL 35150
205-245-5282

For information contact:
J & L ADIKES, INC.
Jamaica, N.Y. 11423
JACKLIN SEED CO.
Post Falls, ID. 83854
NORTHRUP KING CO.
Minneapolis, MN. 55413
ROTHWELL SEEDS LTD.
Lindsay, Ont., CAN. K9V 4L9
VAUGHAN-JACKLIN CORP.
Bound Brook, N.J. 08805
Downers Grove, IL. 60515

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The new *Speed Learning Program* does not offer you a rehash of the usual eye-exercises, timing devices, costly gadgets you've probably heard about in connection with speed reading courses or even tried and found ineffective.

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560 Fulton St
PO Box 366
Buffalo NY 14240
716-825-3300

★ Stauffer Chemical Co
Westport CT 06881
203-222-3254

Stull Chemical Co
1006 Paulsun
San Antonio TX 78219
512-227-5255; outside TX 800-531-5407

Sudbury Laboratory Inc
572 Dutton Rd
Sudbury MA 01776
617-443-8844

Superior Fiber Products Co
409 Washington Ave Ste 1008
Towson MD 21204
301-583-7937

Sweepster
2810 SW Baker Rd
Dexter MI 48130
313-426-3961

Thermoguard
412 113th
Arlington TX 76011
817-640-8783

★ TUCO Ag Chemicals Div Upjohn Co
9823-190-1
Kalamazoo MI 49001
616-323-4000

Union Carbide Ag Prod Co
TW Alexander Ave
PO Box 12014
Research Triangle Park NC 27709

★ United Agri-Products
419 18th St
PO Box 1287
Greeley CO 80632
303-356-4400

United States Gypsum Co
101 S Wacker Drive
Chicago IL 60606
312-321-3863

US Borax
3075 Wilshire Blvd
Los Angeles CA 90010

USS Agri-Chemicals Div US Steel
PO Box 1685
Atlanta GA 30328
404-572-4000

Vaughan's Seed Co
Chimney Rock Rd
Bound Brook NJ 08805
201-356-4200

Velsicol Chemical Corp
341 E Ohio St
Chicago IL 60611
314-670-4665

Vineland Chemical Co
W Wheat Rd
PO Box 745
Vineland NJ 08360

★ Wellborn Paint Mfg Co
PO Box 25645
Albuquerque NM 87125
505-344-3558

Weyerhaeuser
Tacoma WA 98477
206-924-5986

★ Wilt-Pruf Products Inc
PO Box 4280
Greenwich CT 06830
203-531-4740

Zoecon Corp Ag Chem Div
PO Box 975
Palo Alto CA 94306

5. Seed Companies

★ Adelphi
182-12 93rd Ave
Jamaica NY 11423
212-739-4400

J & L Adikes Inc
182-12 93rd Ave
Jamaica NY 11423
212-739-4400
Certified Turfgrass Seed Names: Adelphi KY Bluegrass, All*Star Perennial Ryegrass

Agriculture Service Corp
5240 Gaffin Rd SE
Salem OR 97301
503-581-8899
And
PO Box 101
Harrisburg OR 97446
503-995-6754
Certified Turfgrass Seed Names: Pennant Perennial Ryegrass, Premier Perennial Ryegrass

E F Burlingham & Sons
1936 19th Ave
PO Box 217
Forest Grove OR 97116
503-357-2141
Certified Turfgrass Seed Names: Falcon Tall Fescue, Bonnieblue KY Bluegrass,

Seed Companies

continued

Majestic KY Bluegrass, Birka KY Bluegrass, Sydsport KY Bluegrass, Belle Perennial Ryegrass, Banner Chewings Fescue

Ernst Crownvetch Farms
R 5 Box 806
Meadville PA 16335
814-425-7276
Certified Turfgrass Seed Names: Reclamation type seeds: Penngift Crownvetch, Lathco Flat Pea, Tioga Deertongue

★ Full Circle Inc
PO Box 49
Madras OR 97741
503-475-3877
Certified Turfgrass Seed Names: Merit KY Bluegrass

★ Garfield Williamson Inc
1072 West Side Ave
Jersey City NJ 07306
201-435-3500
Certified Turfgrass Seed Names: Omega Perennial Ryegrass, Eclipse KY Bluegrass, Jaguar Tall Fescue

Grasslyn Inc
641 Pine Grove Rd
State College PA 16801
814-238-0133
Certified Turfgrass Seed Names: Penngift Crownvetch

Great Western Seed Co
950 Jackson SE
Albany OR 97321
503-926-5892
Certified Turfgrass Seed Names: Clemfine Tall Fescue, Rebel Tall Fescue, Prelude Perennial Rye, Palmer Perennial Rye, Diplomat Perennial Rye, Yorktown II Perennial Rye, Baron KY Blue, Ram I KY Blue

Jonathan Green & Sons Inc
PO Box 326
Farmingdale NJ 07727
201-938-7007

Geo W Hill & Co
8010 Dixie Hwy
PO Box 787
Florence KY 41042
606-371-8423
Certified Turfgrass Seed Names: Regal Perennial Ryegrass, Eclipse KY Blue grass, Jaguar Turf Type Tall Fescue, Finelawn 1 Tall Fescue

★ International Seeds Inc
820 First St
Halsey OR 97348
503-369-2251
Certified Turfgrass Seed Names: Turf-Type Perennial Ryegrass: Derby, Regal, Elka, Gator; KY Bluegrass: Merit, Vantage, Enmundi, Scenic; Creeping Bentgrass: Emerald, Penncross, Penneagle; POA Trivialis: Sabre; Chewings Type Red Fescue: Highlight, Checker, Adonis; Creeping Red Fescue: Ensylva; Turf Type Tall Fescue: Houndog, Brookston; Low Maintenance Grasses: Companion Mix; Overseeding Blends & Mixtures: Dixie Green Mix, Dixie Green/Sabre Mix, PHD Perennial Ryegrass Blend, Showboat Mix

★ Jacklin Seed Co
W 5300 Jacklin Ave
Post Falls ID 83854
208-773-7581
Certified Turfgrass Seed Names: KY Bluegrass: Flyking, Glade, Ram I, Birka, Cheri, Eclipse, Adelphi; Reubens Canada Bluegrass; All Star Perennial Ryegrass

Jenks White Seed Co Div Jacklin Seed
PO Box 45
Tangent OR 97389

Kellogg Inc: Seeds & Supplies
322 E Florida St
Milwaukee WI 53204
414-276-0373
Certified Turfgrass Seed Names: All Turfgrass varieties for northern turf areas

★ Loft Seed Co
Chimney Rock Rd
PO Box 146
Bound Brook NJ 08805
201-356-8700
Certified Turfgrass Seed Names: Clemfine Tall Fescue, Rebel Tall Fescue, Prelude & Palmer Perennial Ryegrasses, Diplomat & Yorktown II Perennial Ryegrasses, Baron & Ram I KY Bluegrasses

Mangelsdorf Seed Co
PO Box 327
St Louis MO 63166
314-535-6700
Certified Turfgrass Seed Names: Various Bluegrass Varieties, various Fine-Leaf Ryegrass Varieties, Jaguar Turf-Type Tall Fescue

Manhattan Ryegrass Growers Assoc
1349 Capitol St NE
Salem OR 97303
503-363-1022

Midwestern States Fescue Assn
PO Box 699
Rolla MO 65401
314-364-1336

Normarc Inc
PO Box 238
Tangent OR 97389
502-926-5801
Certified Turfgrass Seed Names: Premier Perennial Ryegrass

★ Northrup King Co
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Minneapolis MN 55413
612-781-8011
Medalist Turf blends and mixtures

★ Oregon Fine Fescue Commission
1349 Capitol St NE
Salem OR 97303
503-363-1022

★ Oregon Ryegrass
4093 12th St
Salem OR 97302

★ Orion Chemical Inc
13261 Garden Grove Blvd
Garden Grove CA 92643
714-971-2299

Oseco BC Ltd Oregon Ryegrass Commission
PO Box 3366
Salem OR 97302

Oseco Inc
PO Box 219
Brampton ON L6V 2L2
Canada
416-846-5080
Certified Turfgrass Seed Names: Baron KY Bluegrass; Haga KY Bluegrass; Omega Perennial Ryegrass; Yorktown II Perennial Ryegrass; Emerald Creeping Bentgrass; REV 81 Reclamation Mixture

Patten Seed & Turfgrass Co
119 Murrell Ave
Lakeland GA 31635
912-482-3131
Certified Turfgrass Seed Names: Tifway, Tifway II, Tifgreen, Tifgreen II, Tifdwarf, Zoysia: Emerald; Centipedegrass

Penncross Bentgrass Assn
1349 Capitol St NE
Salem OR 97303
503-363-1022

★ Pennfine Perennial Ryegrass
PO Box 923
Minneapolis MN 55440
612-781-8011
Certified Turfgrass Seed Names: Pennfine Perennial Ryegrass, Rugby KY Bluegrass

Otto Pick & Sons Seeds Ltd
Box 126
Richmond Hill ON L4C 4X9
Canada
416-884-1147
Certified Turfgrass Seed Names: Agram, America, Blazer, Banff, Fiesta, Nugget, Touchdown, America Tournament, Exeter, Cheri, Flyking, Dormie, Mustang

Otto Pick & Sons Seeds Ltd
4750 Lesage CP 151
St Hyacinthe PQ J2S 7B4
Canada
514-799-4586
Certified Turfgrass Seed Names: Banff KY Bluegrass, Cheri KY Bluegrass, Dormie KY Bluegrass, Fylking KY Bluegrass, Nugget KY Bluegrass, Ram I KY Bluegrass, Touchdown KY Bluegrass, Barone KY Bluegrass, Adelphi KY Bluegrass, Merion KY Bluegrass, Park KY Bluegrass, Canon Canada Bluegrass, Common Canada Bluegrass, Reubens Canada Bluegrass, Agram Chewing Fescue, Jamestown Chewing Fescue, Pennlawn Creeping Red Fescue, Tournament Hard Fescue, Blazer Ryegrass, Fiesta Ryegrass, Derby Reygrass, Manhattan Reygrass, Pennfine Ryegrass, Exeter Colonial Bent Grass, Penncross Creeping Bent Grass,

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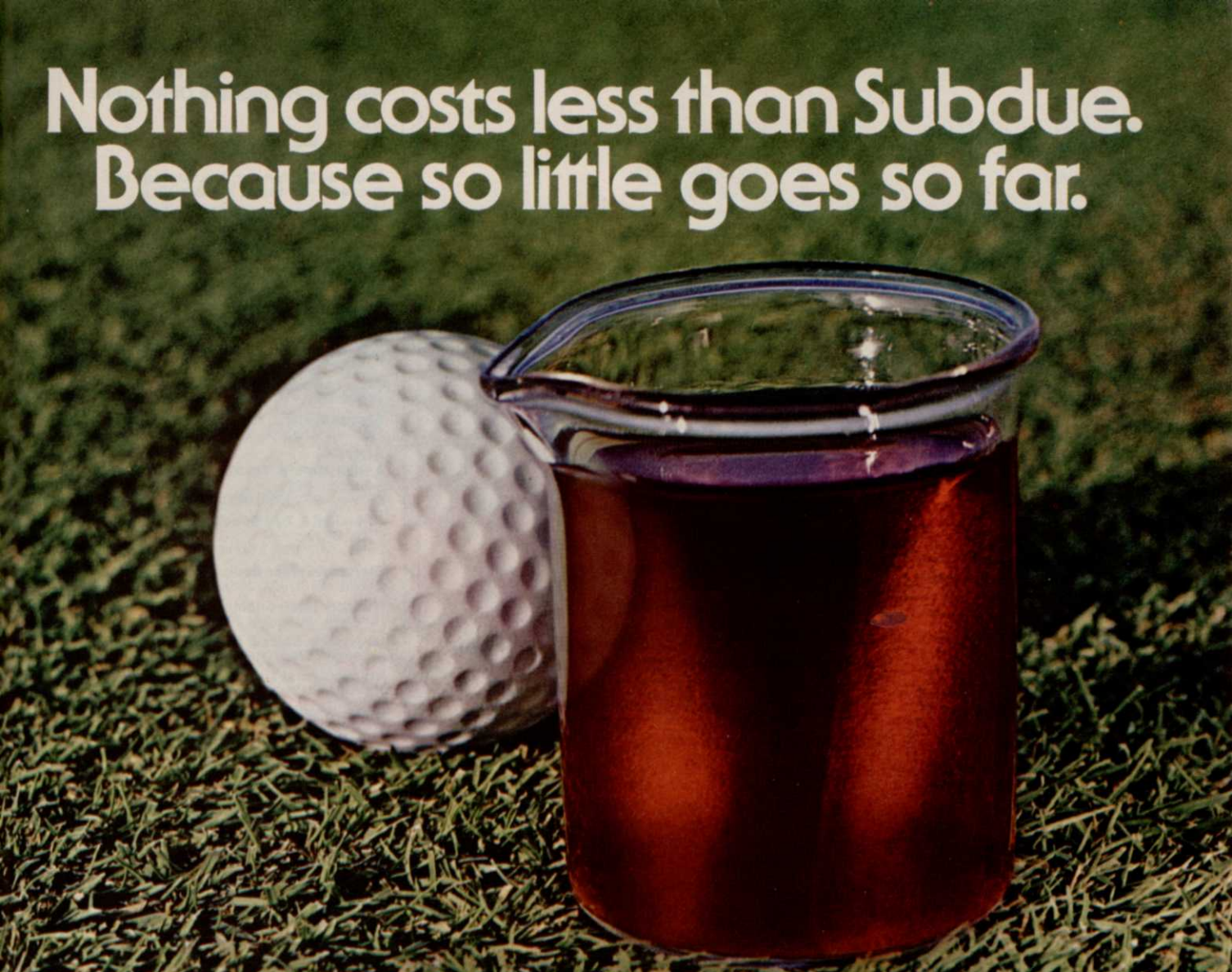

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Ciba-Geigy, Ag. Div., Box 18300, Greensboro, NC 27419

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Circle No. 219 on Reader Inquiry Card

Seed Companies

continued

Emerald Creeping Bent Grass, Astoria Coloniale Bent Grass, Seaside Creeping Bent Grass, Highland Coloniale Bent Grass

Otto Pick & Sons Seeds Ltd
RR 2 Box 4
Winnipeg MB R3C 2E6
Canada
204-633-0088

★ Pickseed West Inc
PO Box 888
Tangent OR 97389
503-926-8886
Certified Turfgrass Seed Names: Banff, America & Touchdown KY Bluegrass, Fiesta Perennial Ryegrass, Agram Chewings Fescue, Tournament Hard Fescue, Exeter Colonial Bentgrass, Mustang Tall Fescue

Rothwell Seeds Ltd
PO Box 511
Lindsay ON K9V 4S5
Canada
705-324-9591
Certified Turfgrass Seed Names: Adelphi Bluegrass; Glade Bluegrass; Eclipse Bluegrass; Barfalla Chewings Fescue; Penncross Bent; Penneagle Bent; Prominent Bent; Bardot Bentgrass; Pennant Perennial Rye

★ Rugby Kentucky Bluegrass
PO Box 923
Minneapolis MN 55440
Certified Turfgrass Seed Names: Rugby Kentucky Bluegrass

★ O M Scott & Sons Co Proturf Div
Marysville OH 43040
513-644-0011
Certified Turfgrass Seed Names: Proturf

Seaboard Seed Co
PO Box 117
Bristol IL 60512
312-553-5801

Seed Production & Introduction Corp (S P I C)
PO Box 923
Minneapolis MN 55440
612-781-8011
Certified Turfgrass Seed Names: Pennfine Perennial Ryegrass, Rugby KY Bluegrass

Southern Turf Nurseries
PO Box 714
Tifton GA 31793
912-382-5655

Stanford Seed Co
560 Fulton St
PO Box 366
Buffalo NY 14240
716-825-3300
Certified Turfgrass Seed Names: Koket Chewings Fescue, Old English, Crown Vetch, Pennfine Perennial Ryegrass, Rugby Kentucky Bluegrass

Stanford Seed Co
RD #1 Box 320
Denver PA 17517
215-267-380
Certified Turfgrass Seed Names: Rugby Bluegrass, Pennfine Ryegrass

Sunbelt Seeds Inc
2055 Tucker Industrial Rd
Tucker GA 30084
404-491-1311; 800-241-9451
Certified Turfgrass Seed Names: Marvelgreen, Rebel, Falcon, Clemfine, U-3 Bermuda

★ Tee-2-Green Corp
PO Box 250
Hubbard OR 97032
503-981-9571
Certified Turfgrass Seed Names: Penn Cross, Penn Eagle

Turf Plantation
202 E Washington
Jonesboro AR 72401
501-972-5549
Certified Turfgrass Seed Names: Tifway 419, Tifway 328

★ Turf-Seed Inc
PO Box 250
Hubbard OR 97032
503-981-9571
Certified Turfgrass Seed Names: Ryegrass: Citation, Omega, Birdie, Oregreen, Manhattan; KY Bluegrass: Columbia, Shasta, Midnight; Fine Fescue: Fortress, Shadow; Hard Fescue: Waldina, Aurora; Olympic Tall Fescue

Vaughan's Seed Co
5300 Katrine Ave
Downers Grove IL 60515
312-969-6300
Certified Turfgrass Seed Names: Adelphi KY Bluegrass, Citation Perennial Ryegrass

Vaughan's Seed Co
Chimney Rock Rd
Bound Brook NJ 08805
201-356-4200
Certified Turfgrass Seed Names: Adelphi Kentucky Bluegrass, Glade Kentucky Bluegrass, Cheri Kentucky Bluegrass, Merit Kentucky Bluegrass, Touchdown Kentucky Bluegrass, Pennant Perennial Ryegrass, Citation Perennial Ryegrass, Regal Perennial Ryegrass

★ Warren's Turf Nursery Inc Seed Div
PO Box 459
Suisun City CA 94585
800-828-8873
Certified Turfgrass Seed Names: A-34 Ben Sun KY Bluegrass

★ Whitney Dickinson Seeds Inc
52 Leslie St
Buffalo NY 14211
716-896-1111
Certified Turfgrass Seed Names: Pennfine Perennial Ryegrass, Manhattan Perennial Ryegrass, Manhattan II Perennial Ryegrass, Rugby Kentucky Bluegrass

For Information Contact Your Nearest Ransomes Distributor

EAST

Bearco, Inc. (Northern OH)
Cleveland, OH 44136, 216/238-2442

Brodner Equipment, Inc. (Upstate NY)
Rochester, NY 14606, 716/247-5218

The Clapper Co. (ME, VT, RI & Eastern MA)
West Newton, MA 02165, 617/244-7900

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Lawrence, PA 15055, 412/341-6447

EDM Distributors, Inc. (CT, VT & Western MA)
Agawam, MA 01001, 413/786-6977

S.P. Lummus Supply Co. (Eastern PA)
Pottstown, PA 19464, 215/327-4920

Ross Lawn Equipment (Upstate NY)
Tonawanda, NY 14150, 716/691-7642

Steven Willand, Inc. (NJ, NY & LI)
Fairfield, NJ 07006, 201/227-5656

SOUTH

Adrian Metal & Tractor, Inc. (Eastern NC & Eastern SC)
Conway, SC 29526, 803/365-5501

Chemical & Turf Specialty Co., Inc. (TX & OK)
Dallas, TX 75238, 214/341-9110

Florida Outdoor Equipment, Inc. (FL)
Orlando, FL 32804, 305/295-5010

Hudson Small Engine Sales (AL)
Huntsville, AL 35800, 205/536-9637

Lawn Care Sales & Service (TN)
La Vergne, TN 37086, 615/793-6052

South Central Turf Equipment (MS & LA)
Jackson, MS 39209, 601/922-7437

Spain Distributing Co. (Western NC & Western SC)
Charlotte, NC 28210, 704/552-9582

Stovall & Company, Inc. (GA)
Atlanta, GA 30318, 404/352-1555

MIDWEST

Brentom Lawn & Turf Corp. (KY & Southern IN)
Louisville, KY 40299, 502/491-0865

Conniff's Power Equipment, Inc. (IN & Southern OH)
Richmond, IN 47347, 317/935-2344

Eagle Green Corporation (NB, MO & Western IA)
Omaha, NB 68144, 402/334-9019

General Turf & Grounds Equipment Co. (MO)
Columbia, MO 65205, 314/874-4951

Ideal Mower Sales (MI & Western OH)
Ferndale, MI 48220, 313/541-4200

Kaye Corporation (MN & ND)
Mankato, MN 56001, 507/345-5083

Olsen Distributing Company (IL)
Barrington, IL 60010, 312/381-9333

WEST

Colorado Outdoor Power Equip., Inc. (CO, WY & NM)
Denver, CO 80223, 303/733-4651

J. & J. Power Equipment, Inc. (OR)
Eugene, OR 97402-0129, 503/344-1483

Jenkins Machinery Company (CA)
Concord, CA 94520, 415/685-6685

Turf-Go Northwest (WA & OR)
Seattle, WA 98133, 206/771-4885

Ward Enterprises, Inc. (UT)
Salt Lake City, UT 84104, 801/972-3287

CANADA

Consolidated Western Ind. Co., Ltd. (Alta & Sask)
Edmonton, Alta T5S 1H4, 403/484-7181

Duke Lawn Equipment Ltd. (Ont, Que & Maritime Provinces)
Burlington, Ont L7S 1W6, 416/637-5216

Par Equipment Ltd. (Man)
Winnipeg, Man R3E 3J8, 204/775-8988

Rollins Machinery Ltd. (B.C.)
Vancouver, B.C. V5T 1H8, 604/874-6404

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RANSOMES

BOB-CAT

The grass machine.

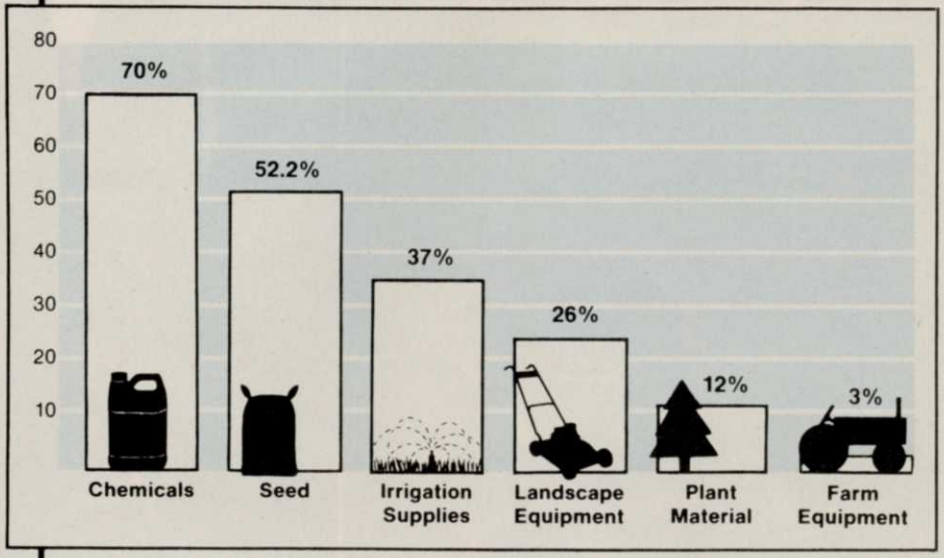
Circle No. 147 on Reader Inquiry Card

LANDSCAPE MANAGEMENT

Great Expectations

Survey shows dealer/distributors increasing inventories, upgrading advertising and promotion to meet expected new sales demands.

What types of landscape supplies do you sell?



Dealers and distributors are expecting sales to increase in 1983 with more than 60 percent of those polled in an informal WEEDS TREES & TURF survey bolstering their inventories to meet the expected demand.

An increase in promotion and advertising is also evident as distributors gear-up for what they expect will be an upturn in business. Competition, however, is keen, with 85 percent of those participating in the survey agreeing price-cutting to get business and bids is becoming more prevalent.

"It seems that other dealer/distributors are bidding now that didn't seem to be interested before, and furthermore, are slashing prices to get this new business," said one distributor.

Most others concur.

"In several of our geographic areas, competition, primarily involved in general agriculture, has come into the turf and ornamental field with lower-than-normal pricing," said another distributor.

Like it or not, some dealer/distributors have been forced into the price-cutting war.

"Our competition overstocked and now they are quoting ridiculously low prices. We have to react," said one disgruntled distributor.

Changing Business Practices

1. Increasing Promotion
2. Exhibiting More at Regional Shows
3. Adding Product Lines
4. Increasing Sales Force
5. Adding Educational Seminars for Customers

Others refuse to cut prices.

"It is common for our competition to do it, but one cannot cut prices and stay in business, so we're hanging tough," replied one.

Others said they are picking up new customers and keeping the old ones without price cutting.

Sixty-four percent are not interested in taking on new lines that compete with products they already carry.

The majority of questionnaries were answered by top management people. Seventy percent of the respondents were involved in some form of chemicals distribution and 65 percent in landscape equipment. Only 7.5 percent dealt with farm equipment. The golf course superintendent and parks and schools maintenance managers are the survey respondents' most important customers. The least-serviced categories were airports, arborists, estate gardeners and sod growers. Only 23 percent were involved in the homeowner market.

On the average, dealer/distributors collected $821,050 annually in gross receipts from golf and landscape customers.

EQUIPMENT

Of the equipment distributors polled, 83 percent have seen business in their service departments pick up with an average turnaround time of four days for equip-

The golf course superintendent and parks and schools maintenance managers are the survey respondents' most important customers.

ment repairs. More than 70 percent offer on-location repair service for the equipment they sell.

Sixty-four percent are not interested in taking on new lines that compete with products they already carry.

"It just doesn't make sense to do it," explained one respondent.

Survey results show 94 percent of the turf seed distributors are not overstocked with any particular type of turfseed. Sixty-six percent offer a private label seed mixture or blend. Sixty-one percent of the turf seed distributor's customers are asking for new and/or improved varieties of turfseed.

More than 50 percent of the respondents have increased their sales force . . .

Less than 1 percent of the chemical distributors custom formulate their own line of chemicals for the landscape industry. The few who do are trying to "offer a unique product" or "to make money."

CHANGING BUSINESS

Everyone, to some extent, however, is changing his business to meet the growing demands on a growing market. The survey showed the highest increase was in the advertising and promotion areas. Decisions to exhibit at regional trade shows are on the increase as are adding product lines such as specialty items, seasonal supplies, more fertilizers and fungicides, sweepers, chain saws, brush cutters and mowers. More than 50 percent of the respondents have increased their sales force and the same amount have added educational seminars for customers.

Customers ranked by importance

1. Golf Course Superintendents
2. Parks and Schools
3. Landscape Contractors and Lawn Care Companies
4. General Public
5. Irrigation Contractors
6. Sod Growers and Hotels and Resorts
7. Farmers
8. Estate Gardeners and Condo/Apartments
9. Arborists
10. Airports

Most dealer/distributors are asking for additional support from the manufacturer, especially in the advertising and service categories.

More companies are adding computer systems and reducing inventories of slow-moving items.

"We're trying to upgrade our technical sales support, while cost-cutting in other areas," said one respondent.

From all survey indications, the stage is set for an upswing in buying in equipment, seed and chemical areas. Dealer/distributors are gearing-up with well-stocked inventories and more effective advertising and promotion of their products. **WTT**

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For more information, write for the Atrinal Landscape Maintenance brochure.

Atrinal®

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P.O. Box 2408
Tuscaloosa, Alabama 35403
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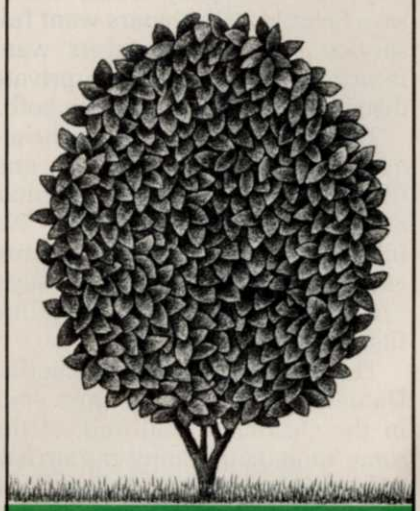

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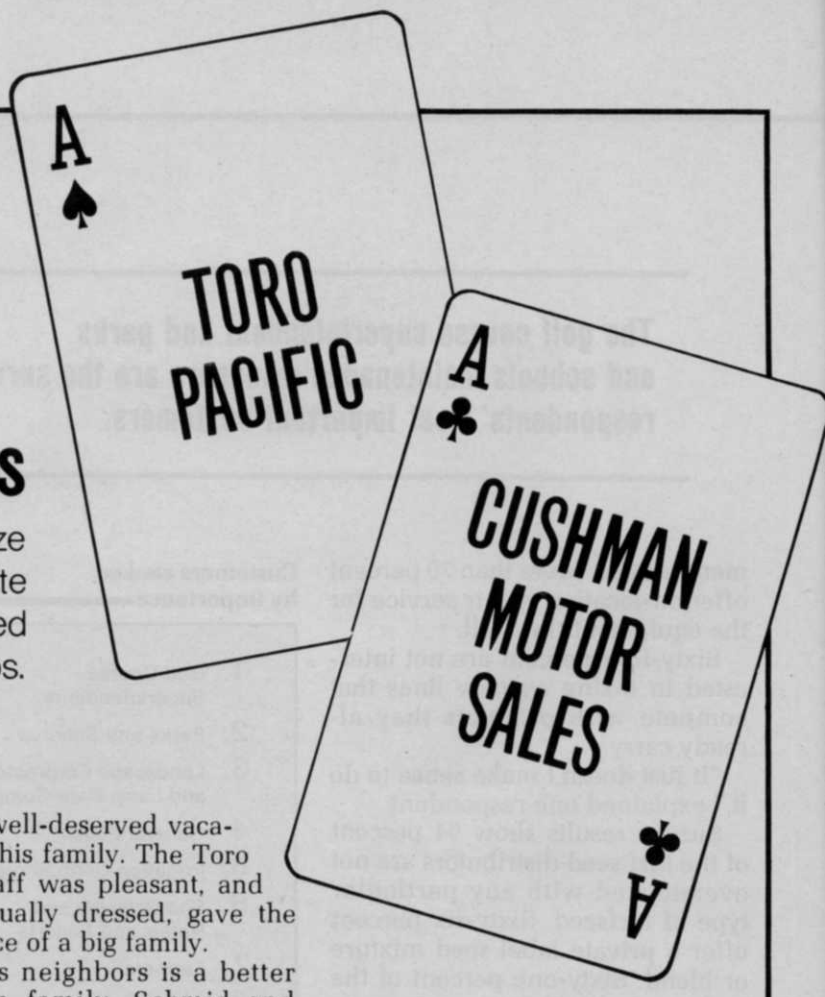

A Pair of Aces

Two neighbors realize benefits of private over company-owned distributorships.

By Bruce Shank
Executive Editor

Dick Danielson and Dennis Schmid felt fortunate in 1978 when The Toro Company decided to sell its three final company-owned distributorships. They bought one and in five years made Toro Pacific double in size.

This June they were dealt a second ace when Cushman/OMC Lincoln sold its company-owned store, Cushman Motor Sales, to Danielson and Schmid. A pair of aces.

"Our success had been based greatly on manufacturers realizing privately-owned distributorships outperform company-owned ones," says Schmid. "Customers want full service and manufacturers want return on investment. The private distributor is able to provide both."

Today, Toro Pacific has its headquarters in City of Industry, and three branch offices in Cerritos, San Diego, and Palm Desert. "We intend to expand vertically, not geographically," Danielson says. "The addition of the Cushman line fits our goals well."

The day we visited Toro Pacific, Danielson was tying up loose ends in the Cushman deal and, at the same time, celebrating the arrival of his first grandchild. Schmid was taking a well-deserved vacation with his family. The Toro Pacific staff was pleasant, and while casually dressed, gave the appearance of a big family.

Perhaps neighbors is a better term than family. Schmid and Danielson are neighbors. In fact, it was a neighborly chat that developed the idea of buying the Toro distributorship in the first place.

"Customers want full service and manufacturers want return on investment." Schmid.

Danielson worked for The Toro Company for 19 years, 14 in the irrigation division in Riverside. He joined The Toro Company after graduating from the University of Minnesota with a communications degree. In 1978, he was national sales manager of Toro Irrigation.

Schmid worked for Dearborn Chemical, a division of W.R. Grace. His education includes advanced degrees in both science and business. For 13 years he worked in Dearborn's sales and marketing department.

Both men are knowledgeable in sales and apply their expertise to each of the three divisions of Toro Pacific. All 23 sales people receive individual sales training including a paid consultant. Six two-hour workshops are provided.

Outdoor power equipment sales is divided into consumer and commercial. A dealer network of 175 people sells consumer turf products. Toro Pacific provides support with parts, service, technical information and advertising. Commercial equipment is sold directly to users by Toro Pacific's own sales force in four locations.

Irrigation is the third division. "We have roughly 70 percent of the golf irrigation business in Southern California," says Danielson. "We are very careful not to compete with irrigation designers."

"Most irrigation is put in per specifications," says Schmid. "We provide designers specifying irrigation systems with details on Toro Irrigation products and help them any way we can. We do not compete with them in designing systems."

According to Schmid, the Irriga-

tion Division is a sales hybrid. "We sell direct to installers, golf courses and municipalities, but the lion's share is sold through 40 irrigation wholesale supply houses in the area."

Toro Pacific does not plan expansion into the chemical business. "We couldn't do justice to chemicals, seed or nursery plants," says Danielson.

"We doubled our sales in the first five years and we intend to double them again in the next five." Schmid.

In addition to Toro and Cushman products, Toro Pacific sells allied products from other manufacturers. These include golf accessories from Standard and Par Aide, spreaders from Lely and Vicon, aerators from Dedoes, Ryan, and Multicore, tractors from Mitsubishi, and Dihautsu and Sand Dancer turf vehicles.

Toro Pacific backs up its products with a service department of 8 mechanics and four radio-dispatched service technicians. The City of Industry office has 8,000 square feet of service area and more than 100,000 square feet of inventory and storage space.

The distributor's territory is from San Louis Obispo to the Mexico border in California, nearly 250 miles wide and 400 miles long. In that region are many dynamic buyers. Two are Environmental Care and Cal Golf and Tennis, both multi-million dollar buyers of turf equipment which are expanding outside California.

The future is bright for Toro Pacific. "We doubled our sales in the first five years and we intend to double them again in the next five," claims Schmid. "With the economy on the mend, an assortment of new products from Toro, and the addition of complementary product lines like Cushman, we will accomplish our sales goals."

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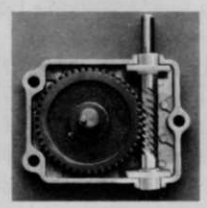

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Top: Machinery awaits repair outside the Porter Brothers service department. **Bottom: Joe Porter,** president and chief executive officer of Porter Brothers, Inc.

Porter Brothers, Inc.

Planned growth, computers and communication keep North Carolina distributorship's sales better than ever.

By Maureen Hrehocik
Associate Editor

It all started back in 1949 with a company called the Carolina Chain Saw and Equipment Co., three employees and one product—McCulloch Chain Saws. Thirty-four years and a name change later, Porter Brothers, Inc. in Shelby, NC, an exclusively wholesale distributorship, does in excess of $35 million annually, employs more than 120 people and represents such manufacturers as Jacobsen, Cushman, U.S.S. Fertilizer, Heckendorn, National, Turfco, Smithco, Mott, Snapper, Yazoo, Merry Tiller, Green Machine, McCulloch, Koehring, Flymo, Topper, Carlton and Giant Vac.

Joseph M. Porter is president and chief executive officer of the company. His brother, Paul, is chairman of the board. W. Robert Porter, now deceased, founded the company. His brother, James, served as vice president until his death in 1979.

It is Joe Porter, though, who is in the office on a daily basis carrying out the affairs of the company. He prefers people to call him "Joe" and delegates with a quiet authority and soft-spoken manner. He travels once a week, 50 weeks a year in the field to "get a pulse" on what's happening. Communication—to his customers and to his employees—is important to Joe Porter.

Sales for 1983 are projected to be the best year yet for the company with only the chain saw and portable heater businesses lagging.

Porter Brothers is now a publicly-held company, owned by the RSI Corporation. Porter Brothers 1982 sales provided 44 percent of the parent company's total revenues. Sales for 1983 are projected to be the best yet for the company with only the chain saw and portable heater businesses lagging.

Porter Brothers distributorship is divided into two areas: power tool (which is a wholesale operation and accounts for approximately 74 percent of business) and the turf division (products are sold directly to the user, mainly golf courses, making up the other approximately 26 percent). Each area has a little more than 2,000 accounts. Chemicals and fertilizers are sold to turf customers only.

"We're a one-stop shopping center for a turf customer and for a dealer," Porter says.

The company's success is mirrored on the walls of its modest, but expansive, 8-acre Shelby headquarters. Various awards from almost every manufacturer line its walls, including the prestig-

ious Jacobsen Golden Reel Award. The company has been named for several years to the Jacobsen Golden Reel Club and at this year's GCSAA show in Atlanta was a repeat winner of the Professor Jake Award for outstanding distributor service.

The company distributes in an area that covers North and South Carolina, Virginia, West Virginia and east Tennessee.

"We're a one-stop shopping center for a turf customer and for dealers."

"We have enough geographic area," Porter explains, "Now we are trying to increase the market share in the area we're in. The market was getting mature in the power tool division in the southeast, so we moved into other territories. The southeast became one of the fastest growing recreation areas. When I was growing up, golf was for professional people, not the working man. That has changed."

National Golf Foundation statistics show North Carolina has 398 golfing facilities and 424 courses, ranking about 12th in the country in number of courses.

It is Porter Brothers continuing philosophy of "planned growth" that spawned the first decision to expand in the mid-50s.

"We knew that having one product (McCulloch Chain Saws) was limiting and that it was a seasonal product. We decided on planned growth. With our customer base we also decided lawn and garden equipment would be more compatible.

The Merry Tiller brand was added in 1953 and then Snapper followed in 1954 (which today, is Porter Brothers largest vendor.) In 1961 Jacobsen asked the company to take on turf products, originating the turf division.

By the mid-50's, the company had outgrown its Quonset hut-like facilities and moved in 1954. It again outgrew its facility and moved to a third (and present) location, which, with warehouse space, encompasses 108,000-square-feet on eight acres. The company owns another 19-acre tract with a warehouse about two miles away.

Porter says the company is selective when choosing dealers.

"Our basis for success is keeping a good customer base," Porter explains. "We don't like to overcrowd. We make a selective appointment of dealers. They have to meet certain standards such a physical facilities, finances and buy minimum quantities."

To ensure a long-term relationship with his suppliers, Porter considers the venture a two-way street. "We must represent his entire product line. We want compatible products, not competing."

With more and more new products flooding the market, and with manufacturers coming out with similar products, this is sometimes a difficult area for distributors to handle.

"This (competing product lines) is a major problem. There are so many products and so many manufacturers making competing products, it's sometimes difficult to get an acceptable share of the market. We'd like to cherry-pick products, but we have to be fair. For example, Merry Tiller is a standard among tillers. Snapper, which we also represent, came out with an almost identical model of tiller. It makes it difficult. We're all trying to grow profitably."

"Service is a key aspect of our company," Porter continued. "We don't sell anything in cartons in the turf division. It is unpacked, inspected and shipped ready to go."

The company provides service through its dealers who are trained at Porter Brothers Field service representatives calling on customers every week.

"We conduct regular service clinics," Porter said. "We schedule calls on dealers regularly. We also solicit service business in the winter when the grass isn't growing."

The Power Tool and Turf divisions have separate sales staffs; 12 in turf and 14 in power tool. The salesmen live within the area they service. The company also has a small retail outlet for the convenience of those living in Cleveland County (North Carolina), but, according to Porter, he would like to get out of retail.

Porter Brothers. also conducts service/user clinics with assistance from the various manufacturers.

Another, more direct way of service that Porter Brothers provides is toll-free numbers to the company for sales orders and questions answered by sales people who can give on-the-spot answers.

The company is entirely on-line with a computer system that allows sales people to tell the customer immediately the availability of the item they want.

"We try to plan ahead and use all systems available," Porter said.

Porter uses market research and attributes it to much of the company's success.

Customers appreciate thoroughness. We try to make it easy for you to do business with Porter Brothers."

Porter is very proud of his advertising and marketing program. According to him, this area is where a distributor "earns his stripes."

"We are marketing people," he says simply. "Delivery is important, but so is follow-up."

Porter uses marketing research and attributes it to much of the company's success. "More companies should use it," he says. Lack of adequate management did some dealers in."

"We're not experts in advertising, so we employed an agency in the '50s. "We advertise regionally, the manufacturer does it nationally, and we leave it up to the dealers to do it locally."

Advertising is used as an incen-

continued on page 98

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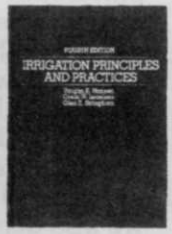

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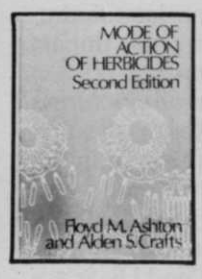

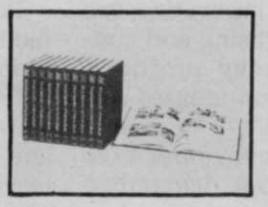

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WTT 93

tive with dealers.

Porter Brothers uses all media, but especially television because it is more effective in demonstrating how a piece of equipment works.

The company has also devised a PACE program, Promotional Advertising with Consumer Emphasis, that outlines numerous ways an individually-tailored advertising program can help each manufacturer.

"The key is to be innovative, use research and advertising and conduct on-going training programs. We're very promotion-minded and advertising-minded."

Porter sees the consumer now spending money, but demanding more value for that money.

"The parts business has definitely picked up," he says.

Porter says the American manufacturers are realizing the impact of imports in this country.

"For years, U.S. manufacturers were making an inferior product and foreigners got a foothold in the market. It started in the auto and electronics market and has now moved into the outdoor power equipment market. The U.S. is accepting it has a quality problem and is starting to try to correct it. The customer saw he could buy a better mousetrap elsewhere and did. The U.S. has got everything it takes to be a leader in this market. And in this cycle, manufacturers are recognizing the importance of a good, strong distributor. Manufacturers are offering better products, better selection and consumers have regained some confidence."

And while the economy is boosting his business, the geographical location of Porter Brothers is another "plus."

"There's been a diversification in manufacturing in North Carolina," Porter said. "When I was growing up, it was an agricultural and textile market. Now it's gotten to be one of the leading financial centers. Our educational system has also improved which bodes well for the future."

Porter grew up on a farm in Cleveland County in what he considers a rather "industrious" family atmosphere. He inherited his father's desire to be an entrepreneur. After a high school education, Joe Porter became an accountant for an automobile agency. His older brothers had been in sales and equipment. "I'd make the poorest salesman in the world," he confesses. Even though his management style was different than his brothers' he decided to join the company in 1951 and became president in 1975. He and his wife, Bea, whom he affectionately calls "mama", have been married 36 years and have two daughters and two grandchildren.

Porter is an avid golfer and was a founding member of the Outdoor Power Equipment Distributors Association.

"It's been a good 61 years," he says with a smile." **WTT**

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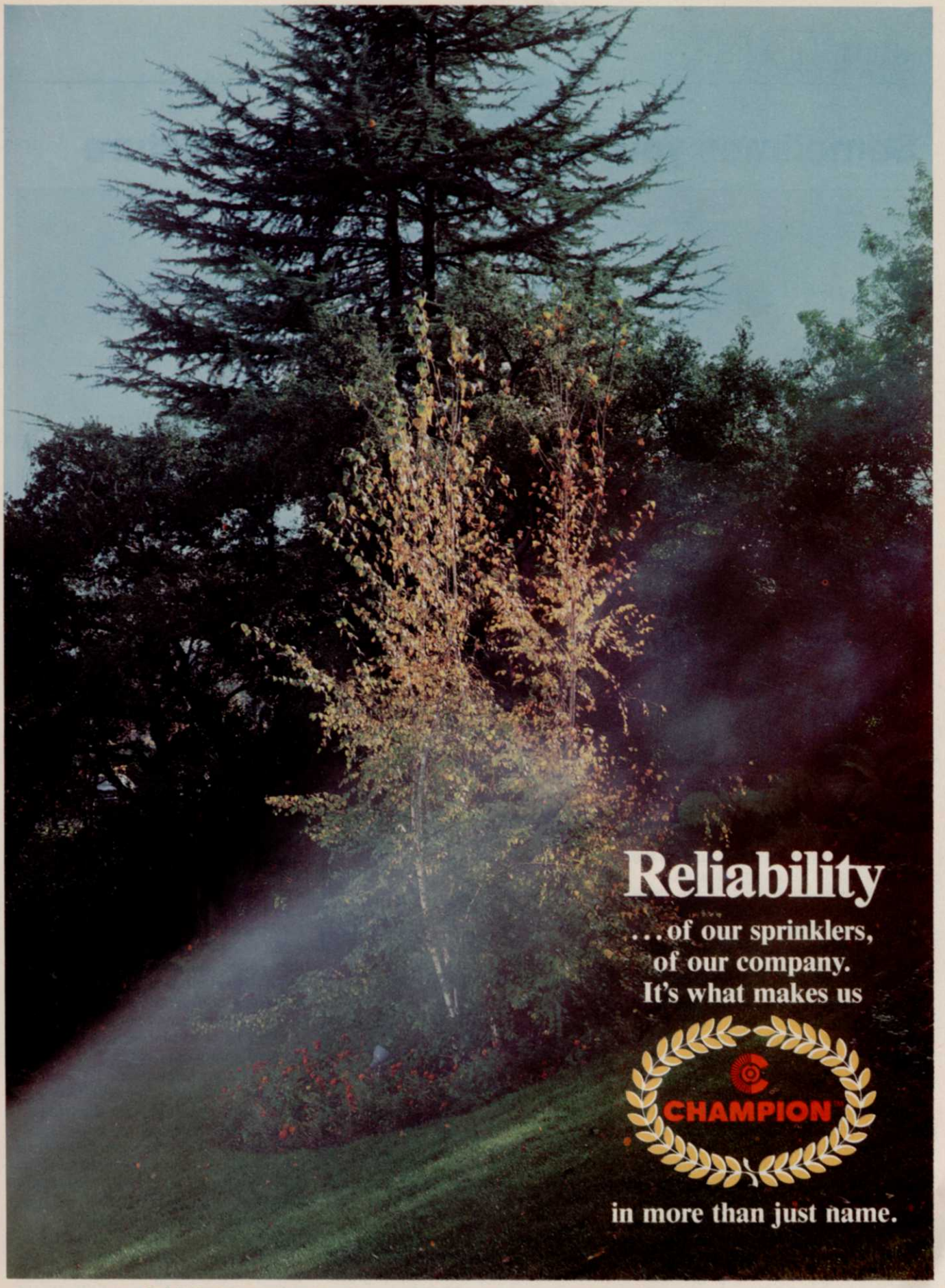

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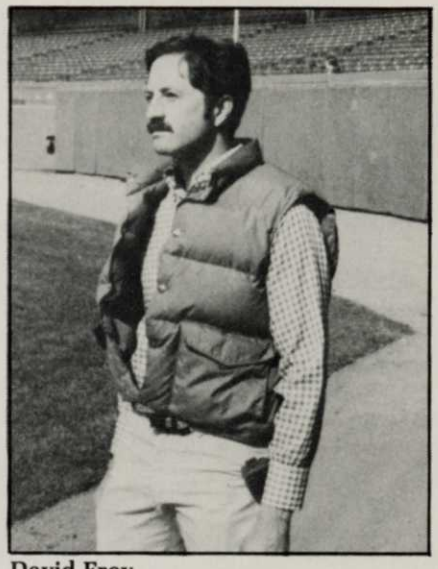
Sometimes you have to fool Mother Nature

Air-supported greenhouse *in late March incubating the turf seed mix.*

As the Cleveland Browns walked off the Cleveland Stadium field last November following the final game of the season, David Frey went to work.

Frey, hired in August of the same year by Larry Staverman, director of the Stadium Corp., grew up in his father's landscape and golf course distributorship, Dryfoos Co., in Solon, OH. He had visited many golf courses and commercial sites working for his father after earning his business degree. It was a personal challenge to him and a test of his experience working with Cleveland area superintendents and landscape managers.

The most sobering thought for Frey was the Cleveland Indians were to play an exhibition on the football-worn field in early April. The mid-field area was a turfless quagmire. The solution in past years was to install sod in March. Frey believed he could forgoe loosely knitted sod by building a greenhouse over the center field area and seeding perennial ryegrass. Instead of buying 2,000 yards of sod, he wanted to buy only 600 yards and seed the rest.



David Frey

Quietly, he went to work, building an air-inflated greenhouse, 60 x 180 ft. After seeking help from various greenhouse companies, with bids more than $150,000, he had the Cleveland stadium crew and a balloonist friend, help him build the structure in early March 1983.

On March 10, with the air-supported structure overhead, Frey and his crew seeded with a mixture of Baron Kentucky bluegrass, Manhattan and Derby perenial ryegrass. By the second week of April and the Indians exhibition game, the greenhouse was gone and the football damage was unnoticeable. The outfielders were playing on grass that didn't move under their feet.

"You have to understand the emotions of sports fans when they enter a huge stadium, see and smell the green carpet of turfgrass, and with beer and hot dogs in hand, yell for their team," Frey stated. "The fact the grass is real and the players have confidence in their footing, is what's important. Indoor stadiums don't have the same sense of outdoors that older stadiums do and that's important to fans."

Northern outdoor stadia, like Cleveland and Milwaukee, need answers to correcting late fall football damage in time for baseball. David Frey strongly believes he may have one solution. **WTT**

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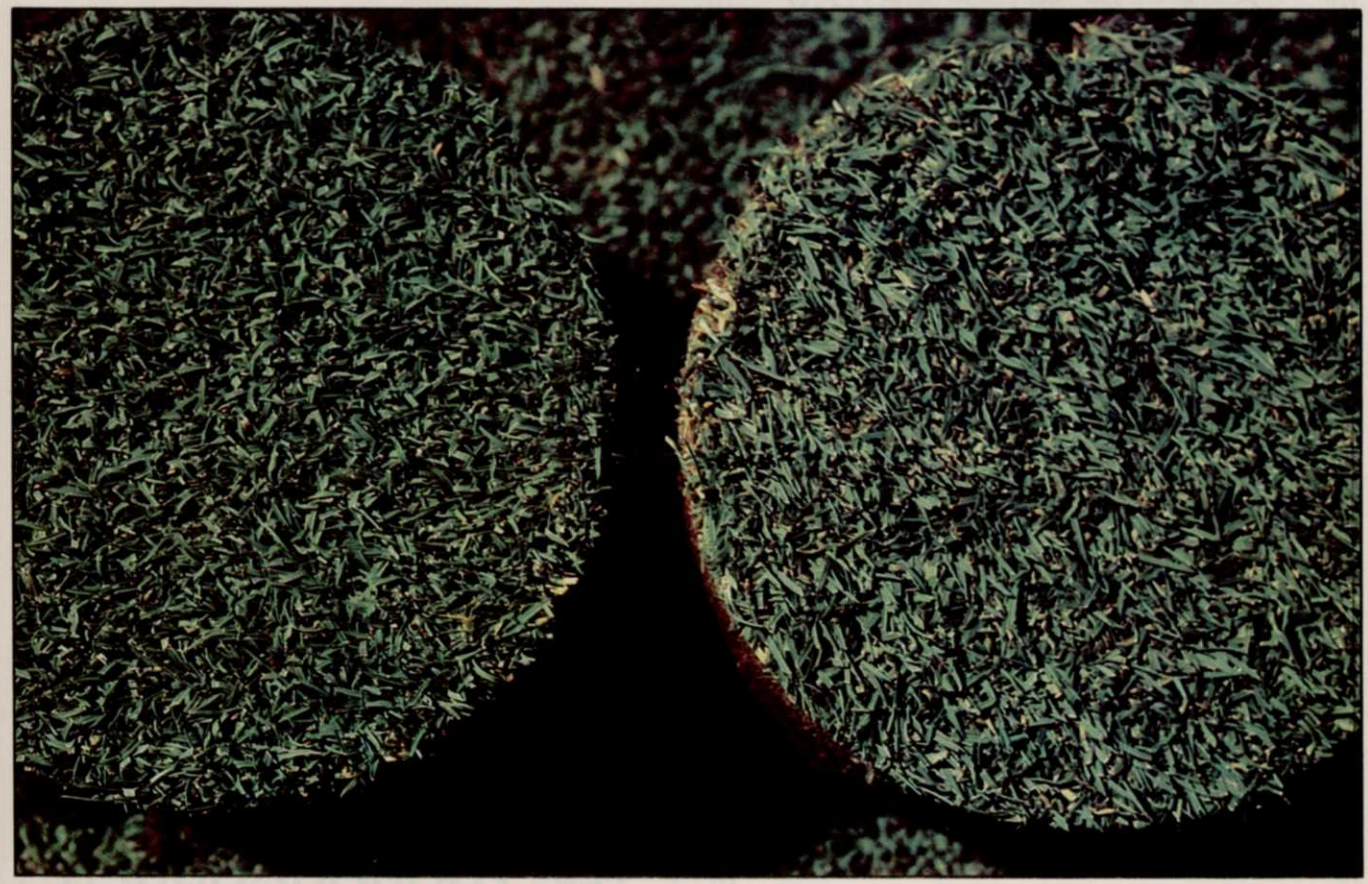

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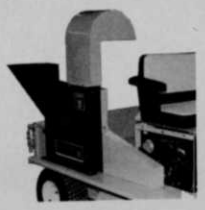

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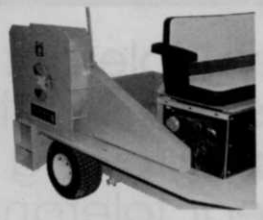

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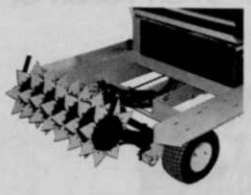

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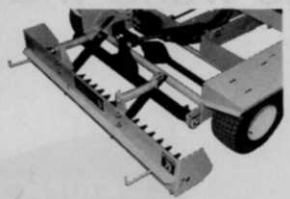

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EVENTS

New York Botanical Garden, "The New Perennials," **Oct. 1,** 8:30 a.m. to 5 p.m. Contact Ruth Clausen (212) 220-8719.

16th International Bedding Plants Conference, Grand Rapids, MI, **Oct. 2-6.** Contact Karen Sen, Bedding Plants, Inc., P.O. Box 286, Okemos, MI, 48864. (517) 349-3924.

Professional Grounds Management Conference and Trade Show Cincinnati, OH. **Oct. 15-19.** Contact Alan Shulder, Executive Director, 7 Church Lane, Pikesville, MD. (301) 653-2742.

North Central Turfgrass Exposition, Arlington Park Hilton Hotel, Arlington Heights, IL. **Nov. 1-3.** Contact Dr. Thomas W. Fermanian, University of Illinois, 1060 Horticulture Field Lab, 1707 S. Orchard St., Urbana, IL, 61801. (217) 333-7847.

7th Annual Arizona Landscape Awards Program. Rio Rico Resort, Arizona. **Nov. 5.** Contact Dick Lambert, Arizona Landscape Contractors Association, P.O. Box 27312, Tempe, AZ 85282. (602) 968-8179.

1983 Oklahoma Turfgrass Conference and Trade Show. Nov. 14-16. Contact Dr. Robert L. Green, 360 Ag Hall, Stillwater, OK 74078. (405) 624-5414.

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Greenhouse & Landscape Maintenance Conference, Salt Lake City Tri-Arc Travelodge. **Nov. 15-16.** Contact Dr. Dallas L. Holmes, Utah State University, UMC 50A. Logan, UT. 84322.

9th Annual Professional Landscape Management School, Indiana State University, Evansville, **Nov. 15-16.** Contact Allen Boger, Extension Agent, Horticulture Room 202, City-County Building, Evansville, IN, 47708.

Arbor Expo, Philadelphia Civic Center, **Nov. 17-19.** Contact Daryl Komar, 17 Washington St., Norwalk, CT 06854. (203) 852-0500.

1983 American Society of Landscape Architects' Education Exhibit, Indianapolis, IN. **Nov. 19-21.** Contact Pam Nesmith, ASLA, 1733 Connecticut Ave. NW, Washington, D.C. 20009. (202) 466-7730.

Ohio Turfgrass Conference & Show, Cincinnati Convention & Exposition Center. **Dec. 6-8.** Contact John Street, OTF, 2021 Coffey Rd., Columbus, OH 43210. (614) 422-2601.

North Central Weed Control Conference, Columbus, OH. **Dec. 6-8.** Contact Clause Cruse, NCWCC Business Manager, 309 W. Clark St., Champaign, Il, 61820.

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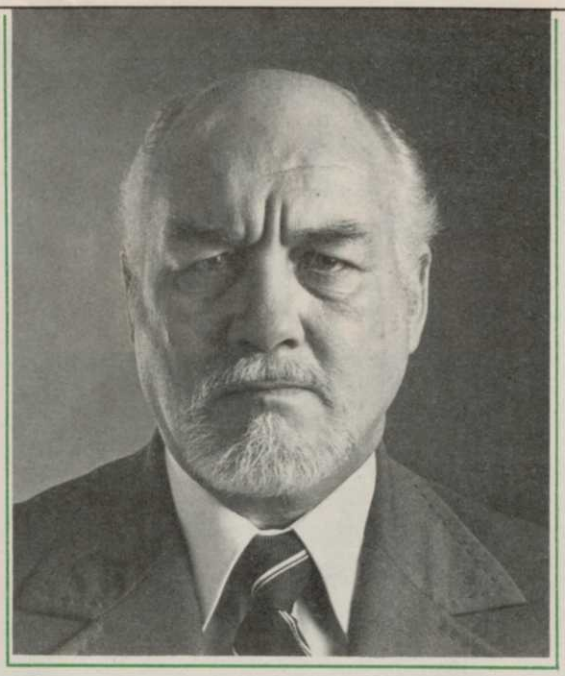

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on
Dollar Spot
Fusarium Patch
Leaf Spot*
Brown Patch*
Red Thread*
*Approval Pending

counteract the force of winter winds prior to root growth. Deciduous trees and shrubs offer little wind resistance and staking may be unnecessary.

Fall is an excellent time to apply mulches. Mulching helps conserve moisture, discourage weeds, and reduce frost heaving and possible root damage. Composted materials (bark, wood chips, or leaf mold) provide moisture and temperature benefits without taking soil nitrogen to decompose.

Recent research has shown excessively thick layers of mulch, more than three inches, can damage shallow-rooted plants. Mulch depth should be watched and overmulching avoided.

Turf

Sodding new turf areas is still possible through October with good success, depending upon the weather. As one moves south, sodding can continue through November. A rule of thumb is one should be able to mow the sod twice before the onset of winter.

October is a good month for broadleaf weed control. Advantages to fall weed control include reduced damage to deciduous plants by drift and leaching, desired cool-season turfgrasses have time to fill in for weeds before the next weed season (June), and areas shaded by deciduous trees are now sunny.

Difficult to control weeds, such as chickweed and henbit, and standard dicot weeds, such as plantain and dandelion, can be controlled as long as they are actively growing. Standard phenoxy herbicides are still effective in October and burn potential is reduced. **WTT**

LANDSCAPE LOG

By Douglas Chapman, Dow Gardens, Midland, MI

OCTOBER JOB FOCUS
1. **Trees and Shrubs**
   a. **transplanting**
   b. **mulching, winter protection**
2. **Turf**
   a. **sodding**
   b. **weed control**

October is a key month for transplanting deciduous trees and shrubs, weed control, late season sodding, and winter protection.

Trees and Shrubs

Fall is second only to spring as the best time to transplant deciduous trees and shrubs.

Physiologically, plants require less moisture after losing their leaves and becoming dormant. Transplanting success is improved to the 80 to 95 percent range by using balled and burlapped plants.

Basic guidelines for transplanting are: the hole should be 6 to 12-inches deeper and wider than the ball; addition of manure, compost or peat moss to topsoil for conditioning; and mulching with less than 2-3 inches of composted bark, peat moss, or leaf mold.

Plant slightly above the soil level in poorly drained soils and slightly below in sandy, well-drained soils. Soak the soil around the plant thoroughly before mulching.

Staking is generally advised for conifers or evergreens to

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Chinch Bugs
Sod Webworms
Billbugs, Grubs and
Many Other Insects

PROBLEM SOLVER *from page 20*

Q: *The needles of several spruce trees around our patio have turned a dingy gray. Many but not all of these needles have fallen. Will a fungicide help? [Indiana]*
A: A fungicide will help if the problem is caused by a foliage disease. As head of the plant problem diagnostic clinic for tree care, I've seen a marked increase this year in the number of samples having spruce needle-cast. This disease is caused by the fungus, *Rhizosphaera kalkoffii*. The samples have off-color foliage, i.e., the needles were a mottled yellow-green, brownish-purple or chocolate-brown color. If fruiting bodies are present they look like small, black "pimples" and they emerge from the needle pores or stomata. Bordeaux is the fungicide most often recommended. Timing varies but the first application should go on about the first week in June. If the infection is severe repeat once or twice at approximately 14-day intervals.

Another pest problem on spruces with symptoms fitting those you describe is mites. A heavy infestation will cause the foliage to lose its color and appear yellow, reddish-brown, olive-green or gray. To confirm the presence of mites look for eggs, egg shells, silk between the needles or the mites themselves. You will have to look closely because mites are very small animals. A 10X hand lens will help, or beat the foliage. Collect what drops on a white surface. If you see tiny dots scurrying about they are mites. If you could count the legs there would be four pairs for an adult and three pairs on the immatures or nymphs. Mites are not insects and it's better to use a miticide rather than an insecticide on them. Since spruce mites have many and overlapping generations, more than one miticide application is needed. Also, a superior oil applied while the trees are dormant is effective against the overwintering stages. Oil should be used no more than once a year. Oil may result in a temporary loss of the waxy bloom, expecially on blue spruce. The needles should produce more wax and regain their normal color in four to eight weeks.

Q: *We have a large purple-leafed plum tree and for several years now limbs have died off. I have pruned them out but it doesn't stop. I found some gummy stuff coming from what looks like holes. What can we do? (Illinois)*
A: A common problem of purple-leaf plum especially older, larger trees is borers. Borers are detected by looking for small, usually circular areas of sap-soaked bark or gummy sap which oozes from wounds caused by these insects. The sappy exudate may be mixed with "sawdust" (larval borings).

Most garden centers carry borer sprays which you could apply not to the trunk and branches. The adult, a clear-winged moth, is controlled with insecticide sprays which are applied in May or June. Phermone traps are available for this insect (*Synathedon* spp.) and can be used to determine the presence of egg laying moths in your locality.

If there are many small holes as if the tree was blasted with a shotgun, the problem is caused by bark beetles. The "shotholeborer" (*Scolytus rugulosus*) can also be controlled with a borer spray such as Lindane.

Cut out and destroy all borer-infested, dead and dying branches. Keep the tree healthy by watering and fertilizing regularly. Heathly trees are more resistant to borer attack.

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WTT 93

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LETTERS

Integration important

I want to respond to your editorial, "The Time is Now to Coordinate Educators With Our Industry," in your March issue.

It is very important to have a strong integration of formal education and industry. That has been our philosophy at Lake City Community College [Lake City, FL) over the past 16 years with our highly successful Golf Course Operations and Landscape Design & Sales programs. Our golf course program is a three year program: one year of mechanics and two years of golf course operations. Landscape Design & Sales is two years. An important part of both our programs is the two required on-job-training periods our students must complete before they graduate. They get college credit for their experience, and the students are evaluated at the sites by us, the instructors. This gets us out into the field to find out what is going on, and it helps us keep good control over what is happening to our students in the field. We place our students anywhere in a 500 mile radius of Lake City, so we cover a lot of miles in the summer. This OJT program has been extremely successful.

Another part of our industry contact is our advisory committee made up of golf and landscape industry professionals. We meet with them once a year to discuss our program and evaluate the courses we are teaching and the job market. We have made changes in our program based on their suggestions.

What we need is more motivated young people to meet the industry demand. The Associated Landscape Contractors of America is making a good initial national effort to increase young people's awareness of the opportunities that exist for them in the landscape industry. However, I feel this is something that all landscape companies should also get involved with at a local level. They should take quality slide shows to high schools to let students know what they do. This might entice a student to work for that company for the summer and perhaps go on to school for further training.

I am very excited about our programs because they are vocational education as it should be: training students to get jobs.

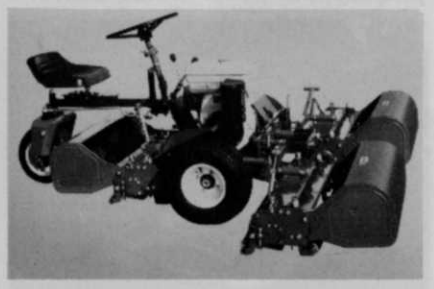
John R. Piersol, Instructor
School of Landscape Design & Sales
Lake City Community College
Lake City, FL

Bunton adds Triplex Approach and Tee Mower

Bunton Company has added a new Triplex Approach and Tee Mower to its line of golf course maintenance equipment.

The maneuverable mower features heavy-duty, welded-steel construction and is ideally suited for golf courses, parks, municipalities and any other situation where a finely manicured turf is desired. The heavy-duty transaxle has three forward ground speeds and one reverse, and can achieve speeds of nearly 10 mph.

Each six-blade cutting reel is individually adjusted for a cutting height range from 7/16 inch to 2 ¾-inch. The three reels are hydraulically raised and lowered and have front and rear rollers to eliminate scalping. They combine to give a 73-inch cutting width.



Standard features include a four cycle, 8½ hp Robin engine, rear wheel steering with an automotive type steering wheel, and a choice of plastic or metal grasscatchers.

Circle No. 180 on Reader Inquiry Card

Manhattan II available for fall delivery

Manhattan II, developed through a hybridization and selection program by Dr. C. Reed Funk of Rutgers University and Dr. William A. Meyer of Turf-Seed, Inc., and Pure Seed Testing, Inc., will be available for fall, 1983 delivery.

This variety, 10 years in the making, offers advantages including attractive leaf appearance after mowing, greater density, darker green color, finer leaf texture, a more dwarf growth pattern, good shade adaptation, increased heat and drought tolerance, and improved resistance to Rhizoctonia brown patch, stem rust, crown rust, leaf spot and red thread, according to its developers.

Circle No. 181 on Reader Inquiry Card

4WD trencher now in diesel

Ditch Witch's Model 2300 trencher is now available with a 30-hp-class diesel engine, as well as a gasoline engine.

The 2300 is a four-wheel-drive

continued on page 108

TORO GM 72 OWNERS

Are you tired of continually waiting for parts for your Renault-powered GM 72? Well, wait no longer. We have the largest inventory of Renault parts in the country. So if you're unhappy with the supplier in your area, call or write us. We will be happy to refer you to a well-stocked dealer in your area or ship direct the same day from our stock. We also have many non-serviced parts in stock.

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trencher that can dig depths of 5-feet, widths to 16 inches, depending on boom and chain set up. A hydraulic backfill blade is standard. An optional front-mounted utility backhoe is also available.

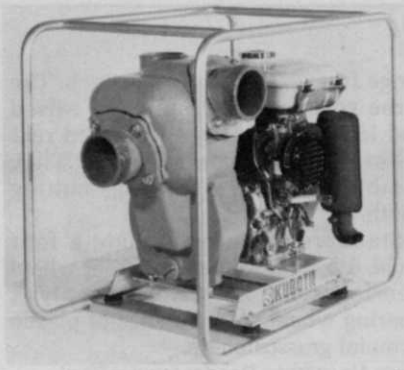
Circle No. 182 on Reader Inquiry Card

Kubota begins marketing water pumps

Kubota Engine Division is expanding its product line to include six models of Kubota pumps. Having marketed their pumps in developing countries throughout the world for more than 15 years, Kubota is now offering them to the U.S. market through local distributors.

All models are gasoline-powered with Kubota-manufactured engines, featuring solid state ignition, cast iron cylinder liner, projection-type spark plug, ball bearings on the crankshaft, stellite valves and an extra quiet USDA muffler.

Four models, 1½, 2, 3 and 4-inch, are self-priming centrifugal. They feature 6,360 to 28,620 gallons per hour pumping output, 82′ to 92′ total head; 25 suction head; and self-priming time of 40 to 90 seconds.



Kubota's two self-priming centrifugal trash models are 2 and 3-inch with 9,540 to 19,080 gallons per hour pumping output; a 79′ total head; 25′ suction head; and a self-priming time of 20 to 25 seconds.

Circle No. 183 on Reader Inquiry Card

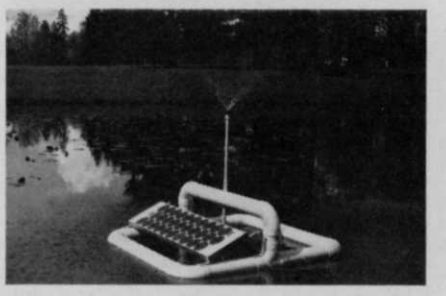
Nobrush controls weeds, grass

Nobrush from the Randustrial Corp., Cleveland, is a dry, granular product for weed control and wherever bare ground is desired. The degree of weed control and duration of effect will vary with the amount of chemical applied, soil type, rainfall and other conditions. Usually, one application sterilizes the ground for one growing season. Nobrush is an effective control for annual and perennial weeds and grasses such as foxtail ryegrass, wild oats, crabgrass, cheatgrass, ragweed, goldenrod, plantain, dandelion, smooth brome, Canadian bluegrass and others. Nobrush may be sown by hand or with the Randustrial Weed Control Spreader.

Circle No. 184 on Reader Inquiry Card

Sun powers pond aerator

The Solar Powered Pond Aerator can replenish oxygen in ponds, fight algae growth and help to eliminate objectionable odors. The power source is a photovoltaic panel which converts



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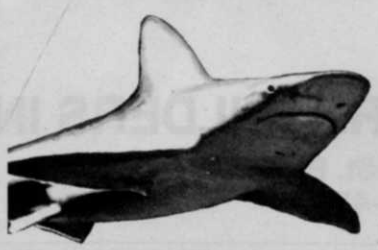

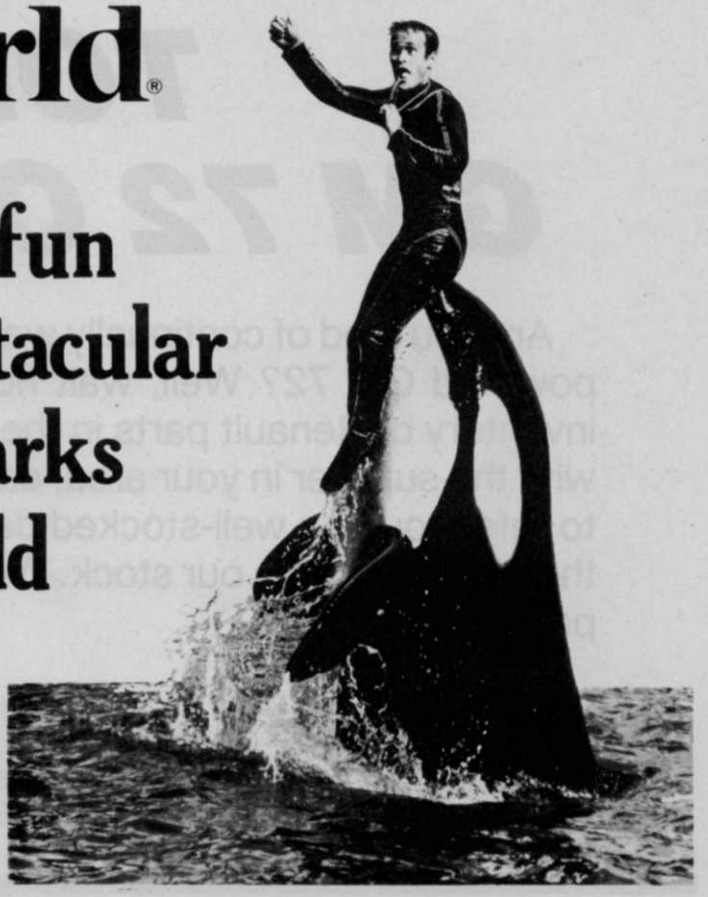

sunlight directly into safe, usable D.C. electricity. There is no power cost and no expensive wiring involved; the unit is completely self contained.

The floating aerator is anchored in ponds with the panel facing out so when the sun strikes the panel, the spraying action begins. At sunset, the aerator shuts itself off. No switches are required. A special, submersible pump with a 400 gallon-per-hour flow rate recycles the pond water, cleaning ponds naturally. The device measures 4′ × 4′ and weighs 37 pounds and can be installed by one person. Low D.C. power eliminates the danger of electric shock. It is shipped partially assembled.

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Finelawn 1 is released by Fine Lawn Research

Fine Lawn Research, Inc., has released Finelawn 1 turf-type tall fescue. Finelawn 1 combines the beauty of its green, narrow tapering appearance with the toughness necessary to resist eight common turf diseases and performs well even in hot, dry, shady or cold environments.

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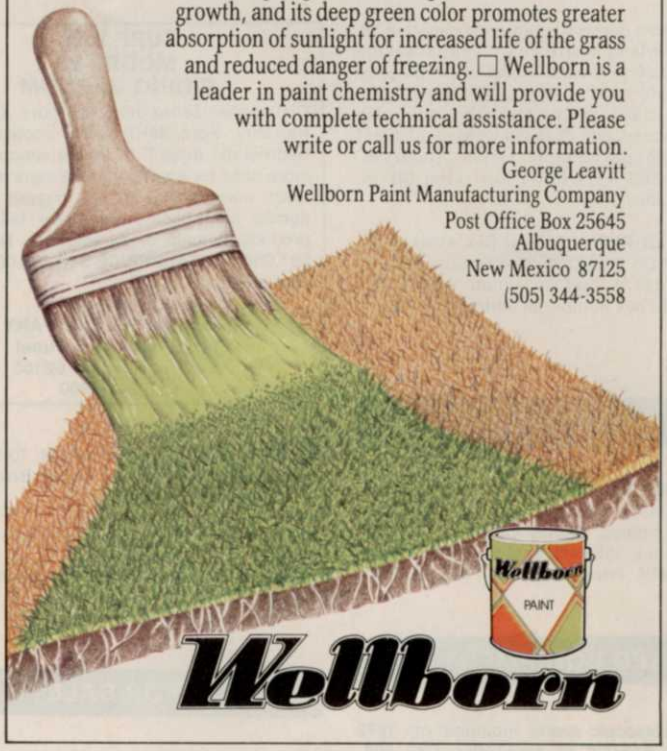

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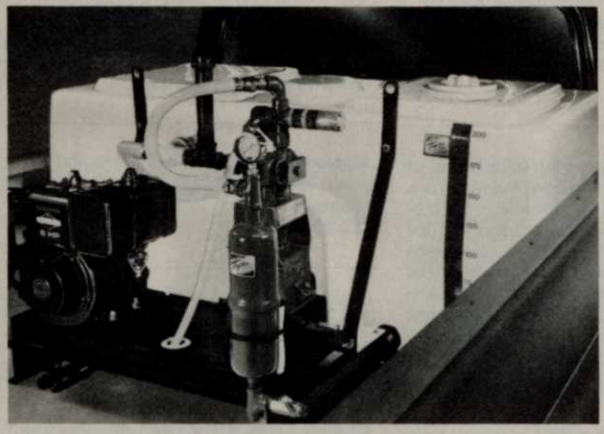
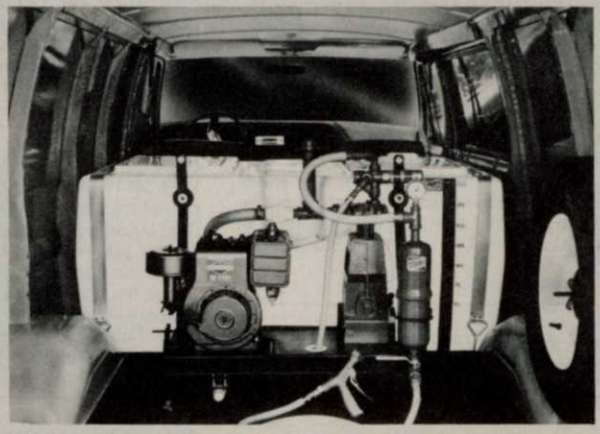
On the move.

PEST CONTROL SPRAY UNITS BUILT FOR YOUR PICK-UP OR VAN.



PC200 gallon spray unit shown mounted in bed of pick-up.



PC200 gallon spray unit shown here through rear door of van.

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PC20810BM PC 200 gallon spray tank with Bean Piston Pump Sprayer (10 GPM 500 PSI). Also available as a 300 gallon sprayer and 200 gallon or 300 gallon split unit.

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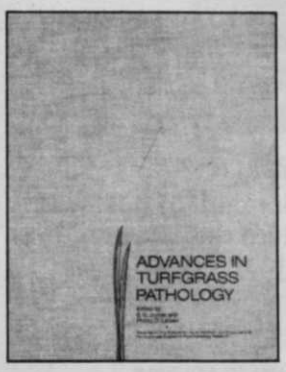

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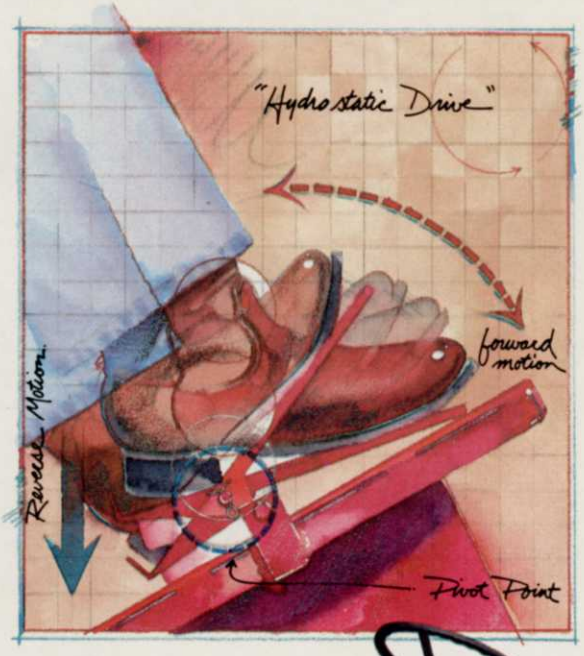

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